Government of Saskatchewan

# Annual Report 1989-90

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## Saskatchewan Highways and Transportation

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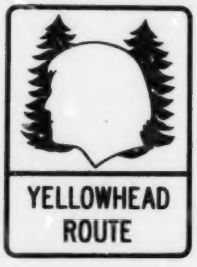


# Letter of Transmittal

SASKATCHEWAN

Legislative Building
Regina, Saskatchewan S4S 0B3
(306) 787-6447

Minister of
Highways and
Transportation

Her Honour The Honourable Sylvia O. Fedoruk, O.C., S.O.M.
Lieutenant-Governor of Saskatchewan

Your Honour:

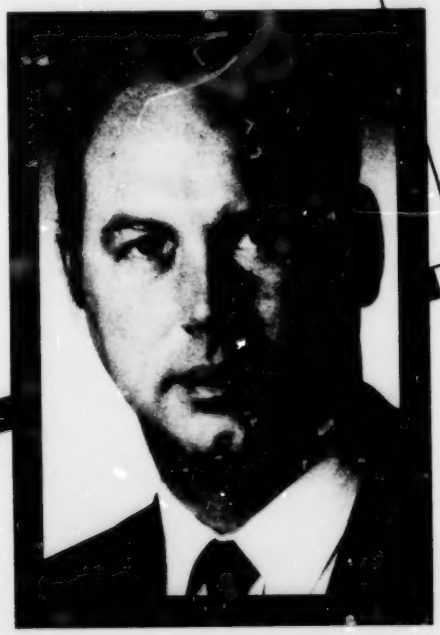
It is a pleasure to submit the 1989-90 Annual Report for Saskatchewan Highways and Transportation.

The changing face of the national and provincial transportation systems is being met by the innovative programs and policies of Saskatchewan Highways and Transportation.

This review of Saskatchewan Highways and Transportation will demonstrate the continued committment of all department employees to providing a quality transportation network for the people of Saskatchewan.

Yours sincerely,

Sherwin H.Petersen
Minister



# Saskatchewan

**Saskatchewan Highways and Transportation**

**Deputy Minister**

1855 Victoria Avenue
Regina, Canada
S4P 3V5

April 1, 1990

The Honourable Sherwin H. Petersen,
Minister of Highways and Transportation

Sir:

It is my pleasure to present to you the annual report of Saskatchewan Highways and Transportation for the the fiscal year ending March 31, l990. The report contains a detailed review of all department activities.

All aspects of the transportation sector in Saskatchewan and, indeed, in all of Canada have undergone tremendous change during the past year. However, when one looks to the decade of the 1990's, the forces of change will be even more pronounced. The department's challenge is to manage this changing environment. This will involve more collaboration and cooperation with all of our stakeholders.

To cope with this changing environment, the department embarked on a strategic planning process for the 1990's. This process began during the past year and will be completed by the spring of 1991. It will involve staff at all levels in the department. We are confident it will assist the department in developing future directions to enable us to achieve our new mission of "WORKING TOGETHER FOR EXCELLENCE IN TRANSPORTATION".

Expertise and innovation in transportation is a key department goal. Some initiatives in this area include the development of a new automated permit system, a pilot project using a geographic information system and the continued development and testing of a prototype paint striping machine using longer life paint for marking highway pavements.

Another example of innovation is the development of a road/rail demonstration project. This project is a world first in grain transportation and is an example of development of new technology central to modernizing Saskatchewan's rail collection system. In December 1989, Southern Rails Co-operative, a farmer owned co-operative, was given authority to operate a short line railway on two abandoned lines in southern Saskatchewan. The operation of this railway was facilitated by the passing of a new Railway Act in October l989. The department continues to be involved in a broad range of research activities including continued participation in the strategic highway research program and the Canadian strategic highway research program. Other research activities involve a state-of-the art weigh scale near Estevan and a transportation technology development program which investigates various truck configurations to improve safety and productivity. This program is an excellent example of a joint effort between the private sector and government in the development of transportation of technology.

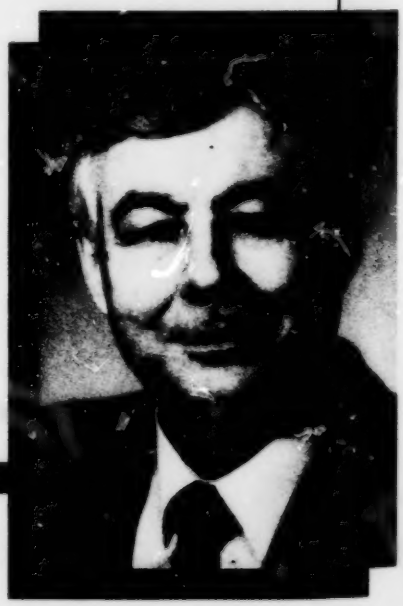
The value of contracts awarded were at an all time high of approximately $62 million. Significant improvements were undertaken on No. 11 highway between Regina and Saskatoon, and the TransCanada Yellowhead highway between Saskatoon and Lloydminster. Emphasis continues to be placed on resurfacing paved highways throughout the province.

The Regulation and Traffic Safety Division continues to develop regulations for the full implementation of National Safety Code standards in Saskatchewan.

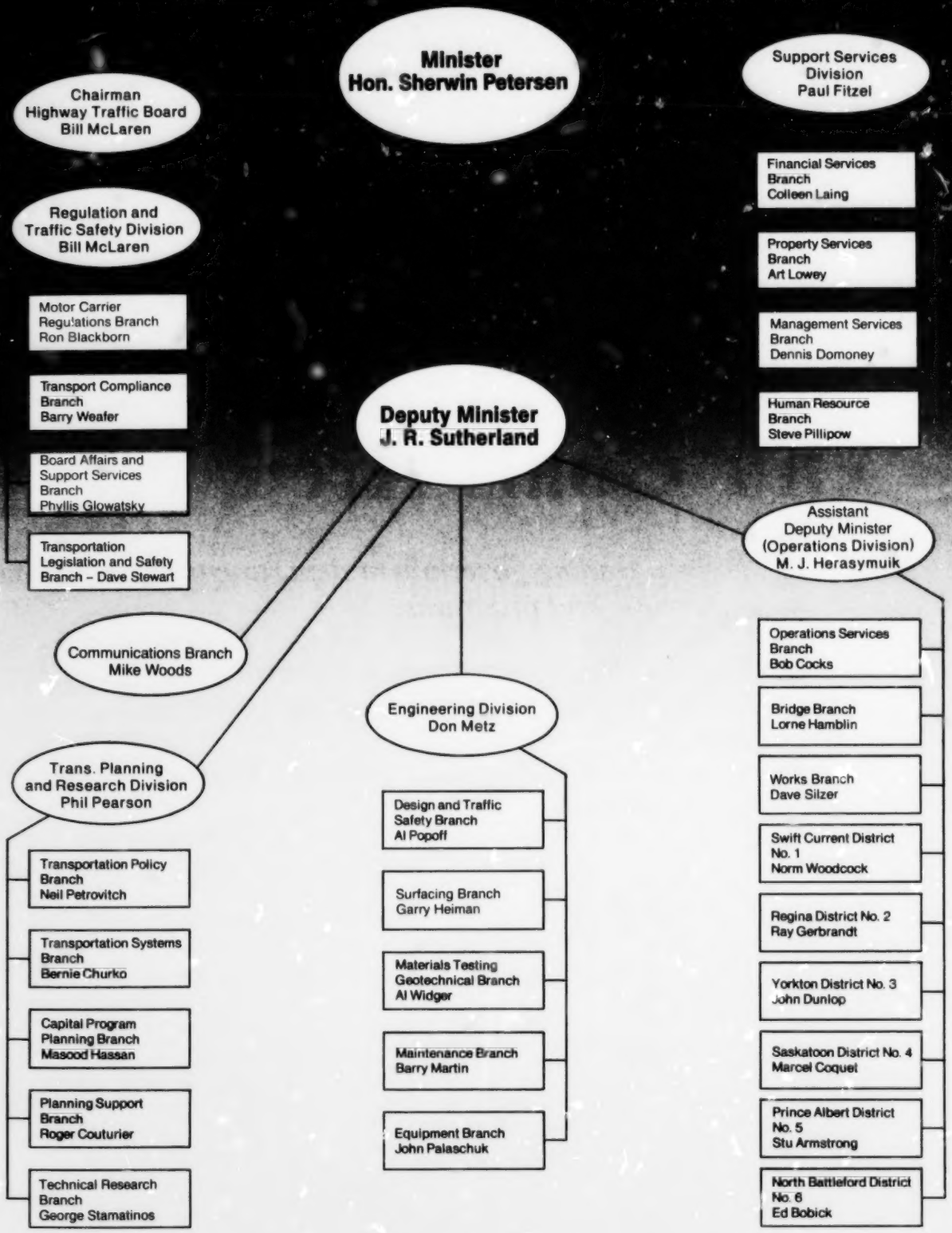
The Communications Branch planned and implemented an "All Terrain Vehicles Safety Campaign" and continued a most successful "Orange Zone" highway worker safety program.

Department staff are to be commended for their dedicated efforts to provide the travelling public of Saskatchewan with safe and efficient transportation services.

J.R. Sutherland
Deputy Minister



# Organization Chart as of March 31, 1990



# Mission

Working Together
for Excellence
in Transportation

# Our Goals Are

- *To be a leading government department in the delivery of services and programs.*
- *To maximize transportation's contribution to the social and economic development of the province.*
- *To be respected for our expertise and innovation in transportation*
- *To build a working environment which develops a sense of pride and personal achievement.*
- *To communicate and consult openly and effectively.*

# Communications Branch

The mission of the Communications Branch is to communicate programs, policies and accomplishments consistent with the department's mission. This communication will result in an informed public who are aware of, and familiar with, the purpose and services provided by Highways and Transportation.

Branch staff achieve this mission by setting and adhering to four primary objectives:

- effectively communicating interbranch activities,department policies, and changing trends in the transportation industry to department employees, special interest groups, and the general public.
- gathering and assessing information to assist in the development of programs and projects to be communicated to the public.
- establishing approval systems, production procedures and selecting appropriate distribution systems as they apply to communication materials for the public.
- adhering to a professional code of ethics as set out by recognized communication/public relations associations.

In addition to these primary objectives, the Communications Branch provides two mandatory responsibilities:

- the branch co-ordinates the production and distribution of official and statutory publications.
- the branch provides a central information service for public inquiries.

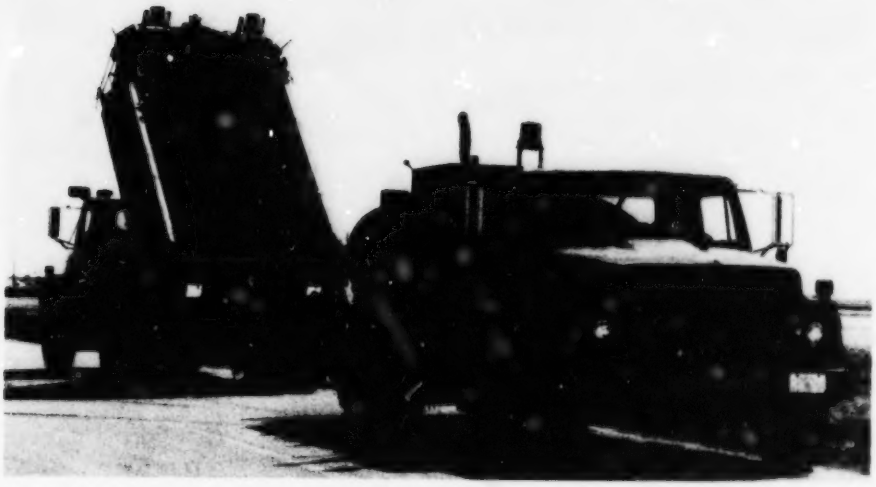
## Highlights

During the fiscal year the Communications Branch continued the 'Orange Zone' highway worker safety, Winter Hotline, Road Restriction and Salvage of Hay advertising programs. Plus co-ordinated special events and produced a wide range of print and audio-visual materials.

The branch also participated in several annual events and conventions including National Transportation Week, SUMA, SARM, Saskatchewan Roadbuilders annual conference, and the Saskatoon's Airport Anniversary celebrations.

During the year the branch issued 123 media releases and maintained a news clipping service for the department.

Printing activities of the branch included the co-ordination of the 1990 Official Highway Map, department 1988/89 annual report, Traffic Accident Systems (TAIS) report, brochure and poster, and the department staff publication In Motion.



# Operations Division

**Sherwin Petersen**
**Minister**
**Highways and Transportation**

**J.R. Sutherland**
**Deputy Minister**

The mandate statement for the Operations Division is "people excelling in the management and operation of transportation facilities and delivery of programs and services". The Operations Division mandate is carried out through six decentralized district offices and three head office branches.

During the past year, the objectives for program delivery were generally achieved. There were 339 kilometres of grading and 775 kilometres of surfacing completed. The value of contracts awarded were at an all-time high at $61.8 million. Significant improvements were made to No. 11 Highway between Regina and Saskatoon, the Trans Canada Highway and the Trans Canada Yellowhead Highway.

The level of service objectives in maintaining over 25 000 kilometres of highway system have generally been met. Emphasis is being placed on reducing the effects of loose material as a result of the seal coat operations.

The division participated in a strategic planning process. The process has identified the strategic matters that the division has to deal with deliberately and do extremely well as we head into the next decade. In the future there will be continued emphasis on service, resource management, communications and consultation.

Considerable work was done in the development of the End Product Specifications in an effort to improve construction quality. In keeping with the long term technology plan, many applications are being developed and utilized with the use of micro computers and local area networks.

Details of specific programs and accomplishments are provided in the following individual branch and district reports.

M. J. Herasymuik
Assistant Deputy Minister
(Operations)

M.J. Herasymuik
Assistant Deputy
Minister (Operations)

Bob Cocks
Operations
Services Branch

Lorne Hamblin
Bridge Branch

Dave Silzer
Works Branch

Norm Woodcock
Swift Current
District No. 1

Ray Gerbrandt
Regina
District No. 2

John Dunlop
Yorkton
District No. 3

Marcel Coquet
Saskaton
District No. 4

Stu Armstrong
Prince Albert
District No. 5

Ed Bobick
North Battleford
District No. 6

## Operations Division Goals

1. To continuously improve the management and operation of transportation facilities.
2. To continuously improve the delivery of programs and services.
3. To be recognized for our high level of expertise and innovation.
4. To achieve the safest transportation operations and facilities in Canada.
5. To provide a high quality work environment.
6. To communicate and consult openly and effectively.

# Operations Services Branch

Operations Services Branch provides executive, technical and financial services to the Operations Division.

## Major Activities

Management of centralized activities related to tendering, scheduling and contract administration.

Development and control of the department's annual capital and maintenance programs and budgets.

Administration of purchasing construction and maintenance materials.

Coordination of cost-shared programs.

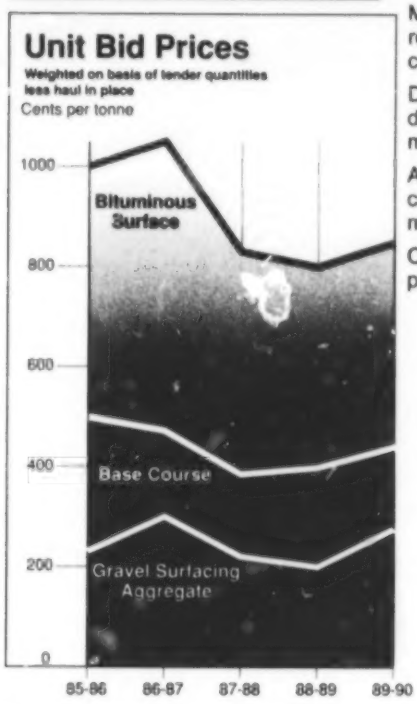
## Tenders

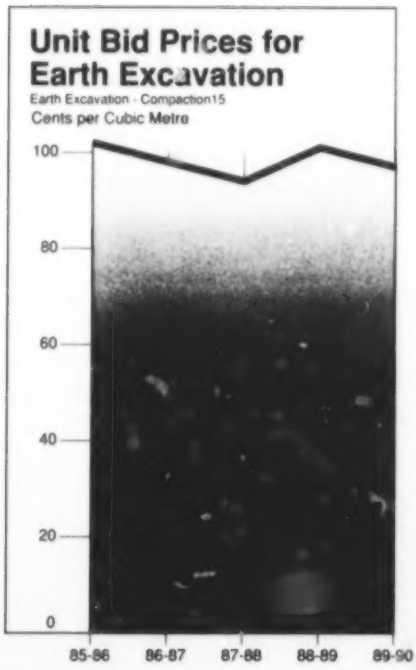
One hundred and twenty-four construction tenders valued at $61.8 million were awarded during 1989-90. In comparison with the previous year, five fewer contracts were tendered, however the value of contracts awarded increased by $3.6 million.

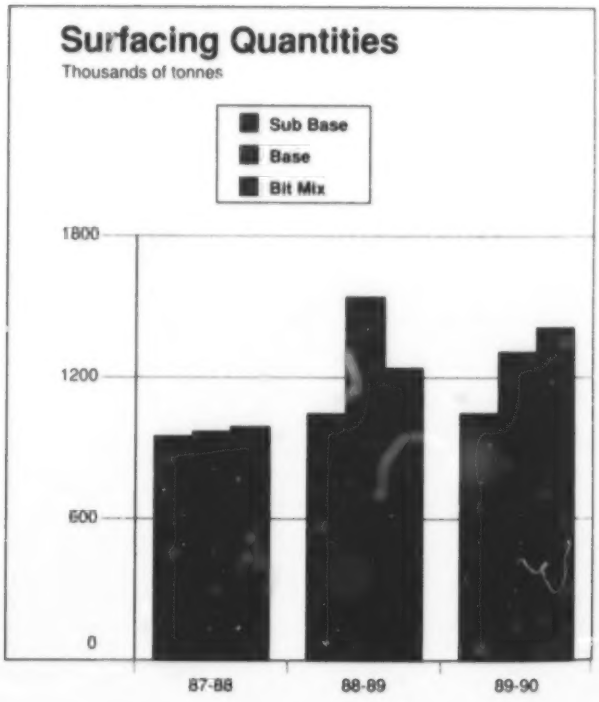
In addition, 44 maintenance mowing tenders valued at $841,400 were awarded. In comparison with the previous year, 14 more mowing tenders valued at $551,000 were issued.

Contracts are tendered throughout the year to provide balanced workloads for contractors. In the fall and winter, heavy emphasis is placed on processing aggregates so that much of the hauling can be done in the winter to minimize damage to haul routes and to create winter work.

Unit bid prices for bituminous surface increased, gravel surfacing aggregate and base course increased and earthwork decreased compared to the previous year.



## Grading

The amount of earth excavation work completed during the year was 6 950 847 $m^3$.

There were 339 km of new construction completed with 30 km of grading work underway at year end.

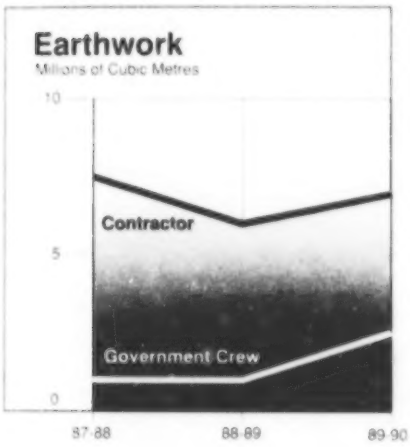
## Surfacing

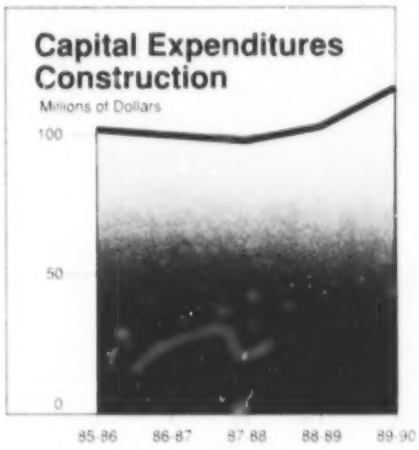
The quantity of bituminous mix on contracts in 1989-90 increased to 1 409 600 tonnes from 1 237 900 tonnes. The quantity of sub-base and base material used in 1989-90 decreased to 2 352 400 tonnes from 2 583 700 tonnes in 1988-89.

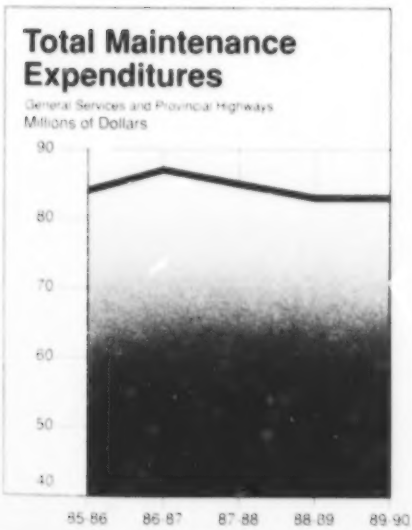
During the year 40 km of oiling, 34 km of pavement C, 180 km of new pavement and 521 km of pavement rehabilitation were completed.

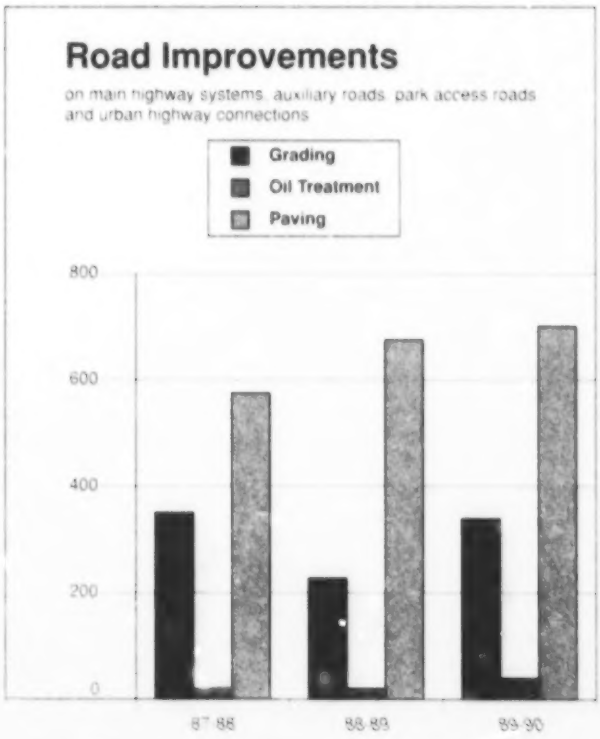
## Urban Surface Transportation

Under the Urban Assistance Program $6,183,380 was provided to assist 21 communities to improve provincial highway routes.



## Air Transportation

Thirty-six local governments participated in the Airport Assistance Program administered by the branch. The department provided $149,335 in assistance under the program. An additional $546,480 in capital costs was spent at three provincial airports.

## Transportation Assistance Programs

Operations Services Branch administers programs which assist in providing transportation services in rural Saskatchewan.

In 1989-90, Saskatchewan Highways and Transportation provided $215,543 in funding to support nine routes under the Rural Transportation Assistance Program.

An additional $73,890 was provided to support two northern feeder service routes to the communities of Deschambault Lake and Sandy Bay.

The Rural Bus Subsidy Program which commenced in 1988-89 provided $122,604 in funding to support four routes served by private carriers.

## Other Highlights

Automatic railway crossing signals were installed at three locations during the year at a cost of $32,490.

The department provided lighting at 45 highway intersections, 2 weigh scale sites and 1 bridge at a cost of $173,946.

149,330 calls were handled on the Department's Hotline Winter Road Information Service.

342 purchase orders for construction and maintenance materials valued at $23,985,470 were processed.

1,012 payments to contractors were processed totalling $68,653,414.

# Bridge Branch

The Bridge Branch is responsible for managing the investment in the bridge component of the department's roadway infrastructure.

## Design

Design was completed for four bridge projects involving 450 $m^2$ of roadway area and for five traffic barrier retrofits totalling 550 m. A pedestrian walkway was designed for the Muskoday Bridge which is located southeast of Prince Albert.

Detailed structural assessments were undertaken for 14 existing bridges, and designs were subsequently prepared for the strengthening of two of these structures to accommodate the current maximum level of vehicle weights.

## Construction

Construction work was completed on the new railway subway located on Highway No. 16 between Borden and Langham, and work continued on the new railway subway over Highway No. 16 at Lloydminster.

A major betterment was completed on a 120 m bridge located on Highway No. 9 south of Hudson Bay. The work included strengthening of the superstructure to accommodate timber industry needs, and the installation of a cathodic protection system in the concrete deck.

Three other new bridges were constructed using standard modular components of precast concrete, and major structural upgrading was undertaken on another three projects. Traffic barrier retrofits were completed on another nine bridges.

## Maintenance

Bridge deck restoration projects were undertaken on four bridges located near Saskatoon. After repairs to the deck surfaces, two bridges were protected with a waterproofing membrane and pavement, while cathodic protection was installed on the remaining two structures.

Minor repairs were completed on another 149 bridges located throughout the highway system. Seven bridges were replaced with culverts.

## Other Highlights

Programmed inspections were done on 155 bridges, and the concrete decks of 22 other bridges were monitored for corrosion of the reinforcing steel.

The branch assisted in the evaluation of 25 permit requests associated with the bulk commodity haul policy, and reviewed 700 referrals for single trip vehicle permits.

# Works Branch

Works Branch operates in four main areas: grading, surfacing, bridges and winter road construction. The branch provides these and other specialized construction services for the Department of Highways and Transportation and other government departments and agencies.

The branch employs between 75 and 100 people during the construction season. These include equipment operators, truck drivers, plant operators, cooks, administrative personnel and supervisors. The nature of work usually requires people to be away from home for long periods of time, working out of mobile self-contained camps.

## Grading Section

The grading crew moved 219 112 $m^3$ of earth material with the use of private and government equipment. Work was done on Highway No. 265 (Snowfield Road) in the Candle Lake area; Highway No. 102 north of La Ronge, and Highway No. 4 south of Cadillac. The crew prepared and placed 14 233 $m^2$ cold mix on park roads and parking lots in the Candle Lake area.

## Surfacing Section

Two surfacing crews completed various road and custom work projects throughout the province. Projects included 16.6 km ripping and drying grade and shoulders on various highways; 7.3 km oil treatment and hauled and placed 32 540 $m^3$ material in Regina, Prince Albert and North Battleford Districts. There were 9,533 depressions filled on various highway surfaces requiring 891 tonnes of sand, sulphur, asphalt mix which consisted of 4,274 batches.

## Bridge Section

The five bridge crews constructed 24 new bridges and repaired 161 bridges for the Department of Highways, Rural Development, and Sask Water Corporation. A total of five bridges had 3 506 $m^2$ of major deck repairs, Cathodic protection and waterproofing.

## Winter Roads

42 km of winter road was constructed to Wollaston Post over Wollaston Lake from Hidden Bay on Highway No. 905.

## Training

Works Branch completed 93 man days of training in management, equipment repair and safety.

## District Offices:

- Swift Current District
- Regina District
- Yorkton District
- Saskatoon District
- Prince Albert District
- North Battleford District

# Swift Current District

The Swift Current District encompasses an area in the southwest quadrant of Saskatchewan whose boundaries are the U.S. Border, the Alberta Border and a line adjoining Macklin, Biggar, Mortlach, Gravelbourg and the Port of West Poplar River. Department personnel are responsible for the maintenance, construction and design activities on all of the 4,299 kilometres of roadway within the district.

## Administration

The Administration Section handles the personnel functions for the district including processing pay sheets, training requests, hiring and personnel policy interpretation for the approximately 235 permanent and seasonal employees in the district.

District staff took approximately 424 man days of training this past year encompassing the mechanical, technical, safety, computer and management areas.

Administration staff also handles all computer related applications, materials requisitioning, and invoicing and accounts receivable requirements for the district.

## Design and Material Testing

The Design Section carried out 51.7 kilometres of preliminary field survey work and completed 17.4 kilometres of subgrade design, primarily on Highway No. 21 south of Govenlock. In addition to this, design on the Beverley Weigh Scale Site Improvements was completed. Various other designs were completed to compliment the district Associated Works Program which includes spot improvements, roadway illumination, safety improvements and other miscellaneous projects.

Detailed Location studies were completed for Highway No. 21 from Govenlock to the United States border, Highway No. 31 in the vicinity of Denzil and Highway No. 44 from Snipe Lake to Eatonia. General location study was carried out for Highway No. 317 in the vicinity of Hoosier.

Engineering assessments of over 175 requests for roadside development, subdivisions, utility crossings as well as drainage complaints were conducted.

The district laboratory and the gravel location section are part of the design function in the district. The lab staff performed over 4,770 individual tests on various material samples taken during field exploration and construction activities.

The gravel location staff tested 12 existing pits and one new source confirming the existence of approximately 250,000 M3 of gravel and 450,000 M3 of sand. Additionally, 40 gravel pits were surveyed in order to update the pit plans.

## Construction

The Construction Engineering Section supervises the capital construction program, cost-shared assistance programs, miscellaneous allotment programs and materials production for the maintenance section.

During 1989-90, contract supervision was provided for 20 contracts. The section staff also prepared 15 contract tender packages. Consulting engineers, supervised by construction section, were responsible for three re-surfacing projects completed during the year.

In 1989-90, 41 km of subgrade were constructed and 106 km of surfacing and re-surfacing were completed. The major projects completed included the following:

- grading Highway No. 21; from Leader to Mendham access - grading Highway No. 31; from Luseland to Salvador
- grading Highway No. 307; from south of Smiley to west of Coleville
- Surfacing Highway No. 31; from Kerrobert to Luseland (soil-cement)
- Re-surfacing Highway No. 1 in the vicinity of Parkbeg from Waldeck east (west-bound)
- From the Alberta Border east
- Re-surfacing Highway No. 4; from Rosetown south
- Re-surfacing Highway No. 7; from Fiske to Brock

The construction section administers cost shared programs. In 1989-90, urban assistance to the City of Swift Current totalled $101,500 for sidewalk construction on various highway connectors. Under the Airport Assistance Program, 21 communities received operation and maintenance assistance and two communities received development assistance. The 1989-90 expenditure for airport assistance totalled $40,168.

Work totalling $68,175 was supervised in provincial parks under the Recreational Area Improvements Program. This included upgrading internal park roads in the Cypress Hill Provincial Park, and some gravel production in Douglas Provincial Park.

The district construction section also supervised the production of materials for district maintenance usage. During 1989-90, 68,920 tonnes of cold mix material was produced and 243,500 tonnes of material was crushed. The section also supervised capital and maintenance seal coat contracts on 530 km of provincial highways in the district.

# Regina District

Regina District is responsible for 5 332 kilometres of provincial and public highways and tourist facility roads, located in the southeast corner of the province.The following accomplishments in the 1989-90 year are noted.

## Design

The design section surveyed 80 kilometres of roadway. Using department staff and private engineering consulting firms, detail design and seven earthwork tender packages were assembled covering 58 kilometres. Five tender packages were prepared covering 90 kilometres of new pavement. Design work concentrated on Highway 8 south of Redvers, Highway 13 east of Stoughton, Highway 46 near Pilot Butte, Highway 48 near Kipling and Highway 361 west of Alida. Also included was a functional and detail design of a new weigh scale site on Highway 11 near Regina.

Incidental items included preparing eight major engineering reports for highway location, drainage, traffic capacity, intersection lighting and long term route planning. 156 minor engineering studies were completed including assessments of proposed subdivisions and developments adjacent to the highway, speed zone reviews, signing, illumination and various safety improvements including assessing the causes of each fatal accident.

## Construction

39 major contracts were supervised by the construction section. Included was the completion of 67 km of earth subgrade with 16 more in progress; 176 kilometres of surfacing with 42 more in progress including 152 kilometres of resurfacing under the Department's rehabilitation program. Three contracts encompassing 579 km of seal coat were also supervised.

Major construction accomplishments included reconstruction of the southbound lane of Highway 11 between Craik and Girvin; the subgrade construction of Highway 48 near Windthorst, Highway 8 north of Carievale including the Storthoaks access; reconstruction to improve the safety of the Junction of Highways 13 and 39 near Weyburn and various resurfacing projects on Highways 1, 2, 9, 13, 39 and 210. Rehabilitation of the on and off ramps on the Highway 11 interchange near Lumsden was completed. Reconstruction began on Highway 35 near Cedoux and Highway 13 east of Assiniboia.

## Maintenance

Maintenance activities were carried out by 34 local and six special roving crews located in 32 communities.

Normal road surface repairs included 7.53 million square metres of spot seal work to seal the surface from moisture penetration. Deep patching, where failed areas are excavated and replaced was done on 38 500 square metres. Spraying asphalt on the surface was done on 271 000 square metres of roadway. To improve the riding quality, 380 km of thin pavements were lifted and relayed using the special "Sandvik" grader blades.

Materials used in maintenance operations included 12.2 million litres of liquid asphalt, 71 600 tonnes of bituminous mix and 165 300 tonnes of crushed gravel aggregate.

For winter maintenance, district crews used 22 700 tonnes of sand, 21 500 tonnes of salt and 8 000 tonnes of sand treated with calcium chloride. Poor visibility during a storm on January 26 caused the closure for a few hours of highways around Regina and Moosomin. The winter hotline handled in excess of 55,000 calls between November and March. A digital dialing service was experimented with, which allows callers to dial in the area of the province they wish information for.

In addition to mowing of the highway right-of-way done by department crews, 11 contracts were tendered covering 6 500 hectares. Blading for summer and winter on 134 km of gravel highways in the district, was done under three contracts.

The permits issued to regulate works by others across or near the highway numbered 160 for utility crossings, 61 for approaches and buildings and 85 for private signs. A major effort was made in the removal or legalizing of advertising signs within the district.

The repair depots in Moose Jaw and Weyburn provided repair service for some 500 power units and various sundry equipment. The preventative maintenance programs were enlarged upon.

## Materials

District materials engineering staff completed or supervised consultants in the completion of designs for five new surfacing projects covering 85 km and thirteen for the repaving of 220 km. As well, the staff provides continuing advice to the design, construction and maintenance groups related to the use of materials.

The gravel location crew located and tested some 600 000 cubic metres of gravel and 98 000 cubic metres of sand in new deposits. Of this, proposals were submitted to acquire 360 400 cubic metres near Chamberlain and Wawota. This compares to an annual use of 460 300 cubic metres by construction and maintenance crews and 97 600 by public agencies and individuals covered by 45 permits. 44 gravel deposits were retested and the plans updated. Location and testing also included a search for special blender sands required for 23 km of paving.

Drilling and testing of roadway embankments and earth borrow was carried out on 109 km of roadway in advance of preparing the designs.

## Shareable Programs

Each of the four cities in the district received assistance for various works. Regina's included work on upgrading Albert St., the completion of the Pasqua St and Ring Road intersection, bridge rehabilitation on Winnipeg St., and modifications to McDonald St.

# Yorkton District

The Yorkton district staff are responsible for 3 410 kilometres of public and provincial highways including 65 kilometres of tourist facility access roads and the operation and maintenance of the provincial airport at Hudson Bay.

Administration

The Administration Section handles the personnel functions for the district including processing payrolls, training requests, hiring and personnel policy interpretation for 69 permanent and approximately 165 seasonal employees.

District staff participated in 380 person days of training during 1989/90 encompassing the mechanical, technical, safety, computer and management areas.

Administration staff also handle word processing, record keeping and computer related applications as well as processing all accounts payable for the district.

## Construction & Design

The district's construction program involved the supervision and administration of nine major contracts and twelve miscellaneous contracts which included crushing, bituminous mix production, seal coating, sand sulphur and replacement of bridges with culverts.

During the year 34 kilometres of subgrade were constructed and 114 kilometres were surfaced.

Some of the major projects completed during the year were:

— the grading of 13 kilometres on Highway No. 9 between Bainbridge (Junction of Highway Numbers 9 and 55) and the Saskatchewan-Manitoba border. This completes the grading of a major portion (35 kilometres) of the northern part of Highway No. 9.

— the resurfacing of Highway No. 16 from Springside to Theodore and from Insinger to Sheho.

— the resurfacing of Highway No. 10 from Yorkton to Otthon and a 9.5 kilometre section west of Balcarres.

— the resurfacing of Highway No. 35 from north of Leross to Bankend.

A significant project that was completed was the subgrade widening and surfacing of Highway No. 57 from its Junction with Highway No. 5 through Duck Mountain Provincial Park to the Saskatchewan-Manitoba border. In conjunction with this project, significant improvements were made to internal park roads under the Recreation Facilities Improvement Program.

Numerous other safety and drainage improvements on the highway system were administered by construction and design staff. These include activities such as hydraulic designs for bridge replacement, delineation lighting at intersections, intersection treatments, preparation of signing plans and reviewing numerous permit requests for subdivisions and utility crossings.

## Maintenance

Oil treated surfaces generally continued to perform well and required only routine maintenance.

An average ride performance rating of 6.1 was obtained in August.

The sandvik blade was used extensively restoring the cross section and profile on the surface of some 150 km of oil treatment.

A small research section was done on Highway No. 309 by the sandvik blade utilizing rejuvenating oils for surface softening. More developmental work will be carried out in subsequent years, refining this particular activity, hopefully, making it less weather dependent.

Some developmental work was done in using fine aggregate for spot sealing on pavements. The work tried in 1989 showed that high quality sand seals could be constructed that had the added benefit of reducing road noise and reducing damage to windshields and headlights caused by flying stones.

The Yorkton shop designed and built a watering system for power brooms to dampen the amount of dust created by road sweeping. This system is being used as the basis for continuing research throughout the province to tackle the occupational health and traffic safety hazards created by dust during road sweeping.

Pavement in our area also performed well. Total funds spent on deep patch was $448,400 which was slightly less than in 1988/89.

# Saskatoon District

The Saskatoon District, which is the core of the province abutting all five remaining highway districts, is responsible for 2 537 km of the provincial highway system. Some of the activities carried out are listed below.

## Highlights

— Installation of high pressure sodium offset lighting along Highway No. 11 north of the City of Saskatoon.

— Regrading and surfacing of 10 kilometres of the southbound lanes of Highway No. 11 from Kenaston to Hanley.

Construction

The construction section supervised 21 major contracts and 15 minor contracts in 1989-90. A summary of work supervised is as follows:

— 35.0 km of subgrade construction.

— 83.6 km of surfacing.

— construction of one intersection treatment and two map turnouts through miscellaneous special construction and special safety improvement programs.

— 336 km of seal coating.

— 19 bituminous mix stockpiles.

— 2 aggregate crushing contracts.

— 1 deep patching contract.

## Maintenance

The maintenance section accomplished the following improvements in the 1989-90 season.

| | |
|---|---|
| — deep patching | 5 062 m² |
| — thermo patching | 68 km |
| — purchased liquid asphalt | 9 090 263 L |
| — seal coat on oil treatment | 148 km |
| — stockpiling bituminous mix | 37 958 t |
| — seeding right-of-way | 61.6 ha |
| — purchased hot-mix | 1 410 t |
| — flushing | 26 km |
| — sand seal on subgrade | 28 km |
| — calcium chloride dust control | 2 863 L |
| — mowing by contract | 1 383 ha |
| — contract right-of-way ditch cleaning | 918 km |
| — machine patching | 25 837 t |
| — spring cleanup around Saskatoon | 25 km |

# Prince Albert District

The Prince Albert District is responsible for 6 229 kilometres of public and provincial highways. The district is also responsible for the maintenance and operation of the Uranium City and La Ronge airports and the maintenance of nine gravel airstrips.

## Design

Design staff completed 26 kms of final subgrade design during the year. Other design activities included:

- Arranging for the installation of delineation lights at five locations.
- Design work for a new airport at Stony Rapids.
- Arranging for the installation of lighting and fencing at the Fond Du Lac Airport and fencing at Cumberland House Airport.
- Assessing requests for sub-divisions and developments in thevicinity of provincial highways.
- Many special studies on items such as drainage, highway safety, signing and speed limits.

## Construction

During the year the construction section supervised 26 major contracts which included one grading contract, four grading and paving contracts,eight rehabilitation contracts including enhancements, seven crushing contracts, one mixing contract, two sealing contracts, one rubber crackfill contract, one select stockpile contract and one airport fence and directional beacon contract. During the construction season 62.5 kilometres of subgrade was constructed and 134.5 kilometres of surfacing was completed. Some of the major projects completed in 1989 were:

- surfacing Hwy. No. 41 west of Melfort.
- resurfacing Highway No. 2 south of La Ronge.
- resurfacing Highway No. 3 east of Mont Nebo.
- grading and resurfacing Highway No. 24 north of Spiritwood.
- grading and surfacing Highway No. 106 in the vicinity of Big Sandy Lake.
- resurfacing Highway No. 3 from Beatty to Kinistino.

In addition to these projects, there were 32 km of log haul roads built, 7.5 km of recreation roads built and oiling was completed on some resource roads and campgrounds. District construction staff also supervised minor projects such as bridge replacements with culverts and culvert installations in winter.

## Maintenance

The highway system maintained includes 3 517 kilometres of gravel, 1 032 kilometres of oil treatment and 1 680 kilometres of pavement.

Some of the major maintenance activities carried out included:

- 255 000 $m^2$ of deep patching
- 185 kilometres of seal coating
- 295 000 tonnes aggregate crushed
- 43 kilometres of subgrade stabilization
- 458 kilometres of dust treatment on gravel highways

The maintenance work is accomplished primarily by 43 crews located in 26 communities and eight isolated camps throughout the district.

Rainfall was below normal resulting in less surface maintenance problems throughout the summer. Winter saw normal snowfall in the district. The Prince Albert Hot Line received approximately 2 800 (60%) more calls than in the previous year. Salt usage to combat icing conditions was 10 200 tonnes which was 3 600 more than the previous year.

The district repair shop in Prince Albert provides the necessary repair and overhaul to an equipment fleet consisting of approximately 500 motorized units and 250 sundry equipment units which includes equipment assigned to Works Branch.

The barge on Wollaston Lake operated 86 days and made 96 round trips compared to 103 days and 117 round trips the previous year.

## Materials

Materials section staff completed or supervised eight rehabilitation designs, one surfacing design and two geotechnical assessments for Prince Albert and North Battleford districts.

Gravel location crews identified and tested 11 new sand and gravel prospects resulting in new reserves of 390 500 $m^3$ and potential haul savings of $800,000. 33 existing sources were retested to verify quality and quantity. Approximately 30 kilometres of grade hole drilling and several hundred asphalt cores were completed to support subgrade and surfacing design projects.

Materials section crews conducted the district subdrain flushing and repair program. 12 systems were flushed and two repaired. In addition a materials crew was on loan to maintenance section to help with the deep patch and miscellaneous special construction programs.

The district laboratory completed 6 000 individual tests on various samples. 11 Marshall Mix designs were completed. The district lab acquired four personal computers as phase one of the lab automation project. District lab staff also monitored the subdrain system condition, field piezometers and frost depth indicators.

## Administration

The administrative section supplied support services to all other sections by processing material requisitions, custom work invoices, processing accounts for payment, as well as processing time certificates for payroll and providing all typing services for the district office. In 1989-90 the administrative section processed approximately 60 material requisitions, 118 gravel and sale of material invoices, 987 construction and maintenance material invoices and 580 custom work and barge billings. Good results were again achieved in the area of processing accounts for payment in a timely manner.

## Other Activities

A total of seven communities participated in assistance programs that included urban assistance and airport assistance.

Delineation lights were installed at five different locations.

Winter roads were operated from Cumberland House to Sturgeon Landing and from Highway 905 to Wollaston Lake.

Special Safety improvements were completed at seven different locations. Four landscaping projects were undertaken.

# North Battleford District

The North Battleford district is located in the northwest corner of the province and is responsible for 3 775 kilometres of public and provincial highways. The district is also responsible for the operation and maintenance of the Meadow Lake and Buffalo Narrows airports, as well as the maintenance of five gravel airstrips.

## Design

Design section completed 80 kilometres of detailed location, 71 kilometres of preliminary survey and 59 kilometres of subgrade design. Two tender packages and 11 special projects were completed.

## Materials

Pit recommendations were carried out for six surfacing contracts and four maintenance crushing contracts.

Four gravel pits were retested, 20 resurveyed and four new sources tested.

Preliminary soils investigation was undertaken for seven grading projects.

Check tests were carried out for all active construction projects.

Laboratory staff performed approximately 4 200 individual tests on various material samples taken during field exploration or construction activities.

Staff issued 30 permits to public institutions and private individuals who removed 50 818 $m^3$ of aggregate from department-owned pits.

## Construction

The district's construction program was administered through 12 major contracts and nine miscellaneous contracts which included crushing, bituminous mix production and seal coat.

During the year 37 kilometres of subgrade were constructed and 130 kilometres surfaced.

Subgrade construction was completed on the portion of Highway No. 304 between Makwa and its junction with Highway No. 26. In addition initial subgrade construction commenced on the easterly end of the highway. A total of 12.2 kilometres was constructed.

Subgrade construction commenced on a 19 kilometre section of Highway No. 903 along the west side of Canoe Lake.

Surfacing of Highway No. 3 from the Deer Creek bridge to its junction with Highway No. 17 was completed with a total of 26.2 kilometres being surfaced.

Surfacing of Highway No. 303 from Turtleford to its junction with Highway No. 21 was completed with a total of 23 kilometres being surfaced. On the section of Highway No. 303 through Turtleford subgrade construction was also carried out including the construction of curbs and sidewalks.

Subgrade construction and surfacing commenced on a 1.5 kilometre section of Highway No. 16 east of Lloydminster. The work consisted of the construction of both the eastbound and westbound lanes. The divided roadway is scheduled for completion during 1990.

Resurfacing of the eastbound lanes of Highway No. 16 between Marshall and Lloydminster was completed. A total of 18.9 kilometres was resurfaced. Resurfacing on portions of Highway No. 26 in the vicinity of Vawn, Mervin and Turtleford was completed. A total of 20.8 kilometres was resurfaced. A total of 12.3 kilometres of Highway No. 4 from Cochin south was resurfaced.

A surfacing structure was placed on Highway No. 165 and Highway No. 918 in the vicinity of Beauval. A total of 7.2 kilometres was completed.

Shoulder widening and resurfacing was completed on 16.3 kilometres of Highway No. 21 from Maidstone north.

## Maintenance

The highways system maintained by district forces includes:

- 1 516 kilometres of gravel surface
- 939 kilometres of oil treated surface
- 1 281 kilometres of paved two lane surface

# Summary of Kilometres of Work Accomplished 1989-90

| Control Section | Location | Dist. | Grading | | Surfacing | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Comp. (111) | U.C. | Pave. A (161) | Pave. C (141) | Pave. D (131) | Rehab (181) | U.C. |
| 1-05-00A | East of Indian Head | 2 | | | | | | 3.91 | |
| 1-05-00B | East of Indian Head | 2 | | | | | | 3.80 | |
| 1-06-00A | West of Indian Head | 2 | | | | | | 3.00 | |
| 1-06-00B | Indian Head to Jct. Hwy. 35 | 2 | | | | | | 13.17 | |
| 1-13-00A | East of Caronport to East of Mortlach | 2 | | | | | | 8.20 | 8.20 |
| 1-14-00A | East of Parkbeg to Secretan | 1 | | | | | | 14.25 | |
| 1-17-00A | Between Swift Current and Waldeck | 1 | | | | | | 9.04 | |
| 1-17-06A | Waldeck Access | 1 | | | | | | 0.22 | |
| 1-19-06A | Beverley Scale Site | 1 | | | 1.36 | | | | |
| 1-22-00A | Hwy. 21 near Alta.-Sask. border | 1 | | | | | | 6.21 | |
| 2-04-00A | Northeast of Ardill to the northeast | 2 | | | | | | 21.71 | |
| 2-07-00A | Tuxford to the south | 2 | | | | | | 5.88 | |
| 2-07-00A | Moose Jaw to the north | 2 | | | | | | 1.61 | |
| 2-23-00A | North and south of Weyakwin | 5 | | | | | | 22.40 | |
| 2-23-00A | Two Forks R. to the northeast | 5 | | | | | | 18.70 | |
| 2-24-00A | South of La Ronge | 5 | | | | | | 29.79 | |
| 3-07-00A | Beattie to Kinistino | 5 | | | | | | 15.20 | |
| 3-13-00A | East of Mont Nebo | 5 | | | | | | 12.40 | |
| 3-17-00A | At Jct. Hwy. 26 | 6 | | | | | | 0.25 | |
| 3-18-00A | Deer Creek Bridge to Jct. Hwy. 17 | 6 | | | 26.17 | | | | |
| 4-02-00A | North of Val Marie | 1 | 2.85 | | | | | | |
| 4-08-00A | South of Rosetown | 1 | | | | | | 16.77 | |
| 4-15-00A | South of Cochin | 6 | | | | | | 12.33 | |
| 5-01-00A | Runnymede access | 3 | 0.66 | | | | | | |
| 5-06-00A | Muenster to Humboldt | 4 | | | | | | 9.65 | |
| 6-09-00A | South of Dafoe | 4 | | | | | | 0.20 | |
| 6-10-00A | North of Dafoe | 4 | | | | | | 5.38 | |
| 6-13-00A | In Melfort | 5 | | | | | | 2.24 | |
| 7-05-00A | Fiske to Brock | 1 | | | | | | 24.48 | |
| 8-02-00A | Carievale to Storthoaks | 2 | 23.25 | | | | | | |
| 9-02-00A | North of Dalesboro | 2 | | | | | | 4.50 | 14.00 |
| 9-08-00A | In Yorkton | 3 | | | | | | 1.79 | |
| 9-08-1BA | Yorkton Tourist Info Booth | 3 | | | | | | 0.18 | |
| 9-09-00A | In Yorkton | 3 | | | | | | 3.50 | |
| 9-09-00B | In Yorkton | 3 | | | | | | 0.63 | |
| 9-15-00A | Along Carrot River | 3 | 11.94 | | | | | | |
| 9-15-00A | South of Waskwei River | 3 | 2.50 | | | | | | |
| 10-03-00A | In Yorkton | 3 | | | | | | 0.33 | |
| 10-03-00A | Yorkton to Otthon | 3 | | | | | | 15.47 | |
| 10-03-1AA | Info sign in Yorkton | 3 | | | | | | 0.14 | |
| 10-03-30A | Southwest of Yorkton | 3 | | | | | | 0.35 | |
| 10-05-00A | Lebret access to the west | 3 | | | | | | 9.80 | |
| 11-05-00B | North of Girvin to south of Davidson | 2 | 9.63 | | 9.63 | | | | |
| 11-06-00B | Northwest of Bladworth | 4 | 11.49 | | | | | | |
| 11-06-00B | Southeast of Kenaston | 4 | | | 5.05 | | | | |
| 11-07-00B | Northwest of Kenaston | 4 | | | 9.70 | | | | |
| 11-07-00B | Northwest of Kenaston | 4 | 9.70 | | | | | | |

| Control Section | Location | Dist. | Grading | | Surfacing | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Comp. (111) | U.C. | Pave. A (161) | Pave. C (141) | Pave. D (131) | Rehab (181) | U.C. |
| 11-08-00A | South of Saskatoon | 4 | | | | | | 2.96 | |
| 11-11-00A | Neunlage access to North of Hague | 4 | | | | | | 17.11 | |
| 13-05-00A | North of Griffin to Weyburn | 2 | | | | | | 20.29 | |
| 13-10-00A | Assiniboia to the east | 2 | 3.97 | 12.09 | | | | | |
| 15-13-00A | Jct. Hwy. 4 and Hwy. 15 | 1 | | | | | | 0.08 | |
| 16-12-00A | Rokeby to Yorkton | 3 | | | | | | 12.50 | |
| 16-13-00A | Southeast of Springside | 3 | | | | | | 1.68 | |
| 16-13-6RA | At Jct. Hwy. 9 | 3 | | | | | | 0.05 | |
| 16-14-00A | Springside to Theodore | 3 | | | | | | 16.00 | |
| 16-15-00A | Insinger to Sheho | 3 | | | | | | 10.68 | |
| 16-18-00A | In Lanigan | 4 | 0.40 | | | | | | |
| 16-19-00A | East and west of Plunkett | 4 | | | | | | 14.60 | |
| 16-20-00A | At Flora access | 4 | 0.86 | | | | | | |
| 16-23-00B | Northwest of Sasktoon to Lanigan | 4 | 15.50 | | | | | | |
| 16-24-00A | Northwest of Sask. R. | 4 | | | 0.68 | | | | |
| 16-29-00A | Jct. Hwy. 21 to Km. 36.76 | 6 | | | | | | 4.46 | |
| 16-30-00A | Marshall to Jct. Hwy. 17 | 6 | | | | | | 14.48 | |
| 16-30-40A | Marshall access | 6 | | | 0.68 | | | | |
| 18-03-00A | East of Jct. Hwy. 9 | 2 | | | | | | 1.82 | |
| 18-11-00A | South of Wood Mountain | 2 | 0.60 | | | | | | |
| 21-07-00A | Mendham access north | 1 | 12.40 | | | | | | |
| 21-15-00A | Maidstone to the north | 6 | 16.30 | | 16.30 | | | | |
| 21-15-00A | At Jct. Hwy. 303 | 6 | | | | | | 0.50 | |
| 23-01-00A | Weekes access to Somme | 3 | | | | | | 6.52 | |
| 23-02-00A | Somme to the west | 3 | | | | | | 8.40 | |
| 24-01-00A | Spiritwood to the north | 5 | 11.40 | | 11.40 | | | | |
| 26-01-00A | At Jct. Hwy. 4 | 6 | | | | | | 0.25 | |
| 26-02-00A | Meota to south Jct. Hwy. 3 (Turtleford) | 6 | | | | | | 19.20 | |
| 26-02-00A | At Turtleford | 6 | | | | | | 1.36 | |
| 26-03-00A | Turtleford to Jct. Hwy. 3 | 6 | | | | | | 5.14 | |
| 26-04-00A | At Jct. Hwy. 3 | 6 | | | | | | 0.25 | |
| 26-04-00A | At Jct. Hwy. 304 | 6 | 0.16 | | | | | | |
| 26-05-00A | At Jct. Hwy. 304 | 6 | 0.21 | | | | | | |
| 26-05-00A | Bridge south of Goodsoil | 6 | 0.23 | | | | | | |
| 31-03-00A | Kerrobert to Luseland | 1 | | | 23.85 | | | | |
| 31-03-00A | Luseland to Salvador | 1 | 13.20 | | | | | | |
| 31-04-00A | West of Salvador | 1 | 0.98 | | | | | | |
| 32-04-00A | Prelate to Leader | 1 | | | 11.18 | | | | |
| 35-04-00A | North of Weyburn to Cedoux | 2 | 7.13 | 8.07 | | | | | |
| 35-10-00A | North of Leross to Bankend | 3 | | | | | | 12.30 | |
| 39-01-00A | Canada-US border to the northwest | 2 | | | | | | 14.72 | |
| 39-04-00A | In Weyburn | 2 | | | | | | 2.05 | |
| 39-05-00B | Northwest of Weyburn | 2 | 2.00 | | 2.00 | | | | |
| 41-01-00A | Melfort to Jct. Hwy. 368 | 5 | | | 15.40 | | | | |
| 41-01-70A | Near Melfort | 5 | | | 3.35 | | | | |
| 41-03-00A | Southwest of Wakaw to Alvena | 4 | | | | | | 14.82 | |
| 41-03-00A | At Jct. Hwy. 27 | 4 | | | | | | 0.33 | |
| 41-04-00A | Aberdeen to the southwest | 4 | | | | | | 8.00 | |

| Control Section | Location | Dist. | Grading | | Surfacing | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Comp. (111) | U.C. | Pave. A (161) | Pave. C (141) | Pave. D (131) | Rehab (181) | U.C. |
| 48-03-00A | West of Windthorst to Jct. Hwy. 47 | 2 | 10.80 | | | | | | |
| 55-12-00A | South of Jct. Hwy. 924 | 5 | 3.60 | 9.46 | | | | | |
| 55-13-00A | At Jct. Hwy. 924 | 5 | | 0.73 | | | | | |
| 56-01-00A | At Jct. Hwy. 1 | 2 | | | | | | 0.27 | |
| 56-03-00A | Bridge to Jct. Hwy. 210 | 2 | | | | | | 0.58 | |
| 57-01-00A | Man. border to Jct. 5 | 3 | 19.28 | | 19.28 | | | | |
| 102-25-00A | In La Ronge | 5 | | | | | | 0.13 | |
| 106-02-00A | Big Sandy Cutoff to the south | 5 | | | | | 19.57 | | |
| 106-03-00A | Jct. Hwy. 165 to near Ballantyne R. | 5 | | | | | 20.80 | | |
| 165-04-00A | East of Beauval | 6 | | | | 4.80 | | | |
| 210-02-00A | Jct. Hwy. 56 to Jct. Hwy. 10 | 2 | | | | | | 12.12 | |
| 221-01-1BA | In Cypress Hills P.P. | 1 | 1.13 | | | | | | |
| 221-01-1CA | In Cypress Hills P.P. | 1 | 0.05 | | | | | | |
| 265-01-00A | Northwest of Jct. Hwy. 120 | 5 | 12.66 | | | | | | |
| 303-01-00A | Jct. Hwy. 26 to Jct. Hwy. 21 | 6 | 0.49 | | 22.94 | | | | |
| 303-02-00A | East of Lloydminster | 6 | 4.90 | | | | | | |
| 304-01-00A | East of Makwa to Jct. Hwy. 26 | 6 | 14.82 | | | | | | |
| 307-01-00A | Smiley to the South | 1 | 4.85 | | | | | | |
| 307-01-40A | Smiley access | 1 | 0.40 | | | | | | |
| 307-02-00A | North and east of Smiley | 1 | 11.40 | | | | | | |
| 310-01-00A | Various grade raises | 3 | 2.70 | | | | | | |
| 310-03-00A | Various grade raises | 3 | 1.30 | | | | | | |
| 335-02-00A | East of Gronlid | 5 | 2.00 | | | | | | |
| 361-11-00A | Storthoaks to the west | 2 | 3.63 | | | | | | |
| 361-11-40A | Storthoaks access | 1 | 0.29 | | | | | | |
| 361-12-00A | Alida to the west | 2 | 16.97 | | 0.73 | | | | |
| 363-01-00A | South and west of Abound | 2 | | | | 12.70 | | | |
| 364-01-00A | Jct. Hwy. 1 to Edenwold | 2 | 18.07 | | | | | | |
| 376-04-00A | Maymont to the north | 6 | 0.80 | | | | | | |
| 378-01-00A | Rabbit Lake to the south | 6 | 0.50 | | | | | | |
| 378-02-00A | East of Rabbit Lake | 5 | 14.05 | | | 14.05 | | | |
| 378-02-00A | East of Rabbit Lake | 5 | 3.60 | | | | | | |
| 918-01-00A | North of Beauval | 6 | | | | 2.35 | | | |
| 922-02-00A | Revo Lake Road | 5 | 11.00 | | | | | | |
| 924-01-00A | At Jct. Hwy. 55 | 5 | 1.53 | | | | | | |
| 942-01-00A | Cowan Lake Road | 5 | 20.80 | | | | | | |
| 953-01-00A | Anglin Lake Road | 5 | 0.50 | | | | | | |

| Location | Grading | | Surfacing | | | | |
|---|---|---|---|---|---|---|---|
| | Comp. (111) | U.C. | Pave. A (161) | Pave. C (141) | Pave. D (131) | Rehab (181) | U.C. |
| DISTRICT 1 | 47.26 | 0.00 | 36.39 | 0.00 | 0.00 | 71.05 | 0.00 |
| DISTRICT 2 | 96.34 | 20.16 | 12.36 | 12.70 | 0.00 | 117.63 | 22.20 |
| DISTRICT 3 | 38.38 | 0.00 | 19.28 | 0.00 | 0.00 | 100.32 | 0.00 |
| DISTRICT 4 | 37.95 | 0.00 | 15.43 | 0.00 | 0.00 | 73.05 | 0.00 |
| DISTRICT 5 | 81.14 | 10.19 | 30.15 | 14.05 | 40.37 | 100.86 | 0.00 |
| DISTRICT 6 | 38.41 | 0.00 | 66.09 | 7.15 | 0.00 | 58.22 | 0.00 |
| **TOTALS** | 339.48 | 30.35 | 179.70 | 33.90 | 40.37 | 521.13 | 22.20 |

**Control Section** — A permanent unit of the highway system which becomes the basic reporting unit for construction and maintenance costs, service life characteristics, and various other data.

**Grading — Completed (Comp.)** - Grading completed within the year being reported.

**Grading — Under Construction (U.C.)** — The under construction portion of the project which is being carried over to be done in the next construction season.

**Rehabilitation** — Work such as pavement resurfacing, carried out to restore a roadway to the standard to which it was constructed. This is warranted when maintenance operations are no longer adequate or appropriate. Differs from upgrading in that the design standard is not improved.

**Pavement "A", "C", and "D"** — Represents different types of surfacing structures.

**Surfacing — Under Construction** — The paving portion of the project which is being carried over to the next construction season.

# Engineering Division

**Sherwin Petersen**
**Minister**
**Highways and Transportation**

**J.R. Sutherland**
**Deputy Minister**

The Engineering Division is responsible for the development of policies, standards and procedures for the design, construction and maintenance of the provincial highway system.

The change of systems from the mainframe computer to personal computers gained momentum and the opportunity for savings in computing costs along with more easily obtained information became a reality.

The pilot project using a Geographical Information System was expanded to a provincial wide system. The system allows various arrays of information which was previously only available in textual forms to be displayed on provincial maps.

The end product specifications project has resulted in two trial projects being prepared for tender in 1990-91.

A micro computer base earthwork program and electronic notebooks were implemented for incorporation into department operations.

The development and testing of a prototype striper which applies a two component, long life paint was completed. This makes available to the department a relatively inexpensive longer life marking for use in areas of high traffic volumes.

The division developed a strategic plan for the 1990's which resulted in a new division mission: "Focusing engineering knowledge, standards and services towards an excellent transportation infrastructure."

D.G. Metz
Executive Director,
Engineering Division

Don Metz
Executive Director

Al Popoff
Design and
Traffic Safety
Branch

John Palaschuk
Equipment Branch

Garry Heiman
Surfacing
Branch

Barry Martin
Maintenance Branch

Al Widger
Geotechnical
and
Materials
Branch

# Equipment Branch

Equipment Branch's mandate is to provide policies, standards, specifications and expertise for the purchase, maintenance, repair and disposal of the departments Equipment Fleet; to provide a service to Equipment Users on all equipment needs and to provide information and data for Fleet Management. Major areas of responsibilities are:

- Develop the annual Equipment Budget
- Purchase all equipment and related items
- Manage and operate the department's Equipment Management Information System (EMIS).
- Analyze fleet trends and provide information and data on fleet management.
- Develop policies standards and procedures related to the purchase, repair, maintenance and disposal of equipment.
- Set rental rates for department owned equipment and for equipment used on Saskatchewan Highways and Transportation contracts and projects.
- Administer the department's mobile/radio telephone communications system.
- Provide technical guidance and expertise on matters related to the equipment fleet.
- Administer the Department's fleet of C.V.A. vehicles.

The department's current fleet consists of 2 321 units, including trucks, tractors, graders, mowers, compactors, sweeper brooms, trailers, camp equipment and heavy construction equipment.

## Fleet Operation

The cost of operating the department's equipment for the year was $20.3 million. Repairs cost $6.5 million, fuel and other operating costs $5.4 million, ownership costs were $3.2 million and $5.2 million was spent on licence and administration. The cost of operating the fleet was 6.3% higher than in 1988-89.

## Equipment Purchases

In 1989-90, the Equipment budget was $4.65 million. Of this total $3.9 million was expended on new equipment acquisitions. The remainder of the budget was expended on preparing new equipment for field use, modifying existing equipment, purchasing shop equipment and tools and for emergency purchases. 90 requisitions were raised to purchase major equipment, support equipment, shop equipment and tools. The current capital cost of Saskatchewan Highways and Transportation equipment fleet is $67 million.

## Rental Rates

New Equipment models were added to the Force Account Equipment Rental Rate Book. The rental rates in 1989-90 remained the same as in 1988-89. The Equipment Rental Rate Books were distributed to some 300 contractors, equipment dealers, trucking firms, towns, cities and other government departments and agencies.

Rental rates for department owned equipment were calculated on a provincial basis. The 1989-90 rental rates were 6.3% higher than the previous year.

## C.V.A. Fleet

C.V.A. Fleet Central Vehicle Agency supplied a total of 378 units to the department. Units supplied were cars, vans, suburbans, and trucks up to one ton. 164 of these were classed as "A" units in which the department pays back C.V.A. a monthly charge for purchasing the vehicles and is responsible for maintenance and repair costs. 214 units were leased on a per kilometre basis where the department pays for the units based on the number of kilometres driven.

## Equipment Management Information System(EMIS)

The EMIS Users Support Committee carried out an extensive review of the existing equipment system that has been in use since 1983. The following Equipment Management reports have recently been developed:

- A Shop Budget Report
- A Historical Usage Report
- A Historical Repair Report Program for the Department
- An Equipment report for Area Maintenance Supervisors

A preventative maintenance program was finalized for approval by senior management.

In addition an EMIS Information Guide was developed and distributed.

A Statistical Analysis System (SAS) has been used to obtain information from EMIS. Early indications are that SAS shows great promise for the retrieval of information and data for analysis of the Equipment Fleet.

# Geotechnical and Materials Branch

## Mandate Statement

To provide current geotechnical and materials policies, standards, specifications, procedures, testing and engineering expertise for the planning, design, construction and maintenance of the provincial highways, roads and airports; and to provide central laboratory services, specialized field sampling and data collecting for a safe efficient and effective transportation system for the Province of Saskatchewan.

## Standards and Policies

Work continued on many studies related to geotechnical standards and policies. A study was completed on pavement C standard and a new subgrade support criteria developed.

Eight asphalt product specifications were revised or rewritten with new pay adjustments. A new general provision for purchase of asphalt and new terms and conditions of tender and supply were developed. A new salt specification with pay adjustments was developed and implemented.

Major work was required for End Product Specifications with 20 standard test procedures written or revised.

## Consultation Services

Geotechnical and Materials Branch participated in design reviews as well as providing formal comments or recommendations on projects. Branch personnel conducted job inspections and attended district meetings to provide assistance.

Branch staff participated in many department committees and research activities.

## Lab Services

Renovations were completed in the asphalt area of the lab to improve utilization of space and equipment and improve air quality.

The Department Central Lab conducted more than 13,050 tests to evaluate materials for highway design, construction, maintenance and research. Tests were completed on 3,095 asphalt product samples to check for specification compliance.

Lab testing was conducted for the following special studies.

- C-SHRP/SHRP Field and Lab Work
- Fractured Faces
- Asphalt Mix Segregation
- Slurry Seals
- Materials Testing For Rubber Asphalt Crack Sealants
- Rutting Study Phase II
- Asphalt Rejuvenators
- Intensive Testing of Asphalt Cements and Emulsions
- Premium Asphalt

The branch provided 60 portable labs and four coring machines to the districts for quality control testing on construction projects.

The Central Lab provided all laboratory services for Regina District as well as asphalt mix designs for Swift Current District. Correlation testing was completed on one project to prepare for EPS. A total of 27 Marshall Mix Designs were prepared. Specialty testing of asphalt mixes was provided for all districts. Central Lab provided all specialized soils testing for the department. Traffic paints were evaluated in order to pre-qualify materials for tendering. Quality control testing was completed on glass beads. Testing of salt was increased. Specialized testing services were provided for other agencies.

Central Lab participated in the National Asphalt Mix exchange and hosted the National Asphalt exchange program in order to ensure accurate testing procedures and results are achieved. A mini mix exchange was conducted with the district labs to check on uniformity of test results.

## Site Investigation

Site investigations which included test drilling, soil sampling and soil property testing were completed on five bridge sites. Major drilling was undertaken at Deer Creek and Carrot River Bridge sites to update information and study movements. Drilling and sampling was completed for the TransGas at Sask Landing using the barge. A total of 3 060 m of test holes were bored. Monitoring of instrumentation was continued at active sites.

Drilling and sampling was completed at five C-SHRP/SHRP test sites.

## Surface Condition Testing

Benkelman Beam deflection tests were completed on 1 900 km of pavements resulting in a total of 14,100 tests. Additional sections were tested for urban assistance projects and for research purposes. A study was completed relating deflections to structure and temperature. Riding quality was assessed on 12 150 km of pavements and five runs on 8 450 km of oil treated surfaces using the car road meters for a total of 54 400 km of testing.

Skid tests were taken on major bridge decks and overpasses to detect or study slippery conditions. In addition testing was completed on research projects and SHRP/C-SHRP sites plus custom work on Manitoba's sites. The branch provided technical support and surface condition testing for Pavement Management Information System (PMIS). The Portable Uniform Roughness Device (PURD) was used to collect surface condition data on 3 600 km of the highway system. A California profilograph was purchased to perform roughness measurements for End Product Specifications (EPS) and other projects.

## Staff Training

The branch reacted to the department's technical training needs by continuing its involvement in technical training. A total of 17 days of training were given in the following classes:

- Asphalt Lab Seminar (1 course)
- Maintenance Basic Soils (6 courses)
- Maintenance Basic Asphalt (2 courses)

Branch staff took a number of development courses.

## Environmental Liaison

Geotechnical and Materials Branch continued its role as the department's official liaison with the Department of Environment and Public Safety. This involves a compilation of the department's capital grading program for submission for environmental approval. The branch also reviewed and coordinated responses to project proposals and provided comments on environmental legislation or guidelines and represents the department on the Environmental Review Panel.

As the official liaison with the Department of Parks, Recreation and Culture on heritage resource concerns relating to the capital program, the branch submitted and received approval for the current projects and obtained clearance for projects on the long range program.

# Design and Traffic Safety Branch

The mandate of the branch is: To promote safe and economical provincial highways by managing the development of standards, policies and procedures governing geometric and hydraulic designs, roadway illumination, roadside development and traffic control devices; and to provide traffic engineering services and guidance to the department by managing data collection systems about traffic characteristics and special studies. To achieve this mandate the branch is responsible for the following activities:

- Developing standards, policies, procedures and specifications governing geometric design, hydraulic design, roadway illumination, roadside development and traffic control devices.
- Providing specialized engineering guidance and advice to senior management, six districts, consultants, other branches, and other roadbuilding agencies on geometrics, hydraulics, roadside development, highway location, traffic control devices, data collection, traffic safety and traffic characteristics.
- Providing traffic engineering services and guidance to the department and related agencies and manage data collection systems about traffic characteristics supplemented by special studies and projects.
- Managing the traffic control devices along provincial highways to ensure uniformity and adequacy and to administer the private signing adjacent to highways.
- Managing a central traffic accident information system for Saskatchewan and providing relevant data to all users.

## A. Traffic Engineering

The objective of the section is to provide specialized traffic engineering services and guidance to the department and related agencies, to manage traffic data collection systems for traffic characteristics and traffic accidents and to undertake traffic operations and safety studies.

### Traffic Accident Information System

The Traffic Accident Information System (TAIS) has now completed 11 years of successful operation. Detailed information about 413,000 traffic accidents is available for studying traffic safety. TAIS is used extensively to develop and monitor accident countermeasure programs.

A traffic accident report summarizing the 1989 accidents was published and 4,000 copies circulated. 1,000 posters and 10,000 pamphlets highlighting TAIS information were distributed.

1,150 customized accident summaries were distributed to local governments. TAIS data is used by others to carry out special studies. Specialized reports were made available to user agencies on a monthly and quarterly basis.

A review to redesign TAIS was started. The objective of the review is to improve the access to TAIS by users, utilize technology to suit all user needs and have the system operate effectively and efficiently.

### Safety Improvement and Traffic Analysis Studies

The department continues to emphasize safety improvements on provincial highways. Improvements at problem locations and overall system safety improvements continue to be an effective means of upgrading the highway to reduce accidents and injuries. On the provincial highway system there has been a reduction of 23 per cent in the accident rate in the past decade.

The Design and Traffic Safety Branch carried out 65 intensive reviews and studies concerning traffic operational problems, speed zone requests and accident prone locations.

The following special projects were completed:

- Study of advance warning signals for railway crossing.
- Evaluation of passing lanes.
- Criteria for locating permanent weigh scales.

Many department functions, such as planning and design standards, rely heavily on data about traffic characteristics. The branch gathers and analyzes comprehensive traffic information throughout the province. Traffic samples are taken each year at approximately 1,000 of the 3,350 locations. The short term counts are calibrated by data from 35 permanent locations that operate year round.

The traffic analysis function, in addition to data collection, encompasses special traffic studies, research projects, and provides specialist advice and assistance on matters relating to traffic characteristics. Specific activities undertaken involved obtaining traffic volumes and vehicle classification counts on the provincial highway system.

The equipment to gather traffic information is being upgraded over a three year period from electro mechanical technology to new electronic systems. This will considerably improve data processing.

## B. Road Design

The branch continued to provide on-going consultation with the districts and others with respect to geometric design, traffic operations, culvert hydraulics, roadway lighting and roadside development.

Updates of the Hydraulics Manuals included the addition of a section on erosion control and updating of the hydraulic theory to reflect Saskatchewan practice as based on research reports undertaken for the department through the University of Saskatchewan.

Preliminary plans were made to conduct a series of geometric design courses in 1990. The intent will be to review basic geometric design procedure and to review recently developed standards with district personnel. The preparation of a Design drafting manual is underway.

The branch has been active in the roadway lighting area, such as use of micro computers for lighting design, reviewing past installations and determining future needs.

Some updates were made to the Design Manual with the major emphasis in the geometric design area being in the implementation of a new micro earthwork design program as outlined below.

### Earthwork Program and Electronic Notebooks

The branch, under the guidance of a department committee undertook steps to incorporate the EMXS SURFACE COMPILER microcomputer earthwork program into department operations. A comprehensive training document was developed and a series of training courses were conducted for various department personnel and consulting engineering firms. A course was also held for the Department of Rural Development to assist the Department in the adoption of the EMXS program and in co-operation with the Saskatchewan Institute of Applied Science and Technology the branch conducted a course for various professional engineers and technicians practicing in the province.

Enhancements to the EMXS program are planned in order to provide improved program operation as related to specific department policy, standards, and procedures. The global Geometric Design System (GDES) has also been planned to provide designers with a number of computer based tools to improve efficiency in the road design process.

The branch also introduced the use of electronic notebooks into department operations on a pilot basis. The intent is to replace paper copies of field survey notes and to become more efficient in survey data management.

## C. Traffic Control Devices

Uniformity of traffic control devices is an important element to maintain a safe and efficient highway system. Signs and signals have an important function in regulating, warning, guiding and providing information to the motorist.

The work unit is responsible for the development and implementation of signing policies and programs. Projects included curve signing policy, litter signing, school bus stop warning signs, ferry and weigh scale signs.

The traffic control section also administers the Private Signing Regulations. Major emphasis was placed during 1989 to remove, move or modify signs that violated the regulations. Sign corridors for advertising signs near communities have increased to fifty locations.

Approximately 25,000 signs were ordered and delivered to fulfill the department's signing obligations. An additional 16,000 reflective delineators were installed to assist the motorists in locating intersecting roadways.

# Maintenance Branch

The mandate of Maintenance Branch is to provide current legislation, policy, standards, specifications and engineering expertise for the maintenance and protection of provincial highways, roads and airports; and to manage the weights and dimensions permit program and the pavement marking program.

## Program Standards

During 1989-90 the department maintained 25 641 km of provincial highways and provincial roads. The system was composed of 10 144 km of staged or standard pavement, 1 674 km of light pavement, 7 993 km of oil treatment and 5 830 km of gravel. This system consisted of 732 km of four lane highway and two lane roadways were divided into 2 789 km of arterial highways, 6 261 km of collector highways, 9 781 km of local highways and 5 346 km of provincial roads. The department also maintained 433 km of tourist facility roadways and sites, 14 gravel airports and five paved airports.

The approved 1989-90 maintenance budget level of $89.87 million represented a 2.7% increase from the 1988-89 budget level. Despite this, the department was able to meet or exceed its objectives for surface maintenance. The Riding Comfort Index on oil treatments exceeded the 5.7 objective. This was achieved due to the expanded use of new equipment (Sandvik blade on a motor grader) which provides for easy recycling of existing oil treatments to improve the ride. The hot and dry weather during 1989 was also felt to be a contributing factor.

The winter of 1989-90 was one of the most difficult in the past several years, particularly for icing conditions. Salt usage was well above the long term average, but still is greatly less than most jurisdictions in the snow belt.

## Pavement Marking

The branch striped 23 414 km of centreline and 20 246 km of shoulderline. The total striping was 566 km above last year's total. By December 15th, over 99% of the highway system was at a service level of three or better for centrelines. One airport was striped during the year by a private contractor.

Development and testing of a prototype striper was completed during the year. This equipment applies a two component, long life paint with an air atomized system. It provides the department with a relatively inexpensive permanent marking which was not available previously and provides a technology which can be adopted by private industry. Using this equipment the department continued its program of providing long life "permanent" markings in high wear areas near urban centres. In 1989 a total of 66 000 m of stripe were applied.

## Weights and Dimensions

The branch was heavily involved in the development and implementation of a new automated Permit System in co-operation with the Motor Carrier Regulation Branch and Sask Auto. This system combines weight and dimension permits, registration permits and operating permits into one system which calculates all fees and prepares customer statements.

The system was put into operation on September 5th. A total of 15,896 weight and dimension permits were issued up to this date. As the new system combines all transportation permits, the statistics for weight and dimension permits are not available. These figures will be available once future system enhancements are made.

Due to the strong demand on the toll-free number for weight and dimensions permits and information, the number of lines was increased from two to three. The number of local lines was also increased from two to three to accommodate periods of peak demand.

The Branch Head continued to be involved with the Interjurisdictional Committee on Heavy Vehicle Weights and Dimensions. Research on the C-dolly was accepted by the committee and the complex technical specifications are being drafted into legislation. Research on the stability of straight trucks and truck trailer combinations was also accepted. National regulatory principles for these configurations are now being developed by the committee.

# Surfacing Branch

The mandate of Surfacing Branch is to develop and review surfacing policies, annual rehabilitation program, gravel resource information and to provide consultative services on pavement design, construction and maintenance.

## Pavement Management/ Rehabilitation Program

The Pavement Management Information System (PMIS) is able to access the Highway Inventory System, Traffic Accident Information System, Traffic Information System, the Maintenance Management Information System and the Riding Comfort Index System through the corporate data base. Pavement condition files, deep patch records, soil classifications, road user cost models and pavement performance models can be used to develop numerous rehabilitation and upgrading strategies.

The PMIS strategies assist department managers in evaluating and developing future highway programs. The PMIS will calculate funds required, quality of service, road user costs and materials required to operate the highway system in the future (up to 20 years). The implementation of PMIS led the branch into the development of a Geographical Information System (GIS) to graphically display information from PMIS. The MunMAP GIS allows the department to produce provincial maps with various information previously displayed in a textual form. There is a potential for future highway Control Section maps to be produced using the GIS.

Annual rehabilitation programs were developed for a two year period by ratings on 1 300 km of highway. The annual program developed consisted of approximately 490 kilometres to be rehabilitated at a cost of $43 million. The program also included approximately 800 kilometres of rehabilitation seal coats.

## Standards and Policy

Mix designs were implemented to minimize rutting on high volume highways. As truck transportation is being made more efficient with increased weights and new tire technology, asphalt concrete will have to withstand the higher loads.

Committees involving department personnel, contractors and consultants, developed End Product Specifications for two pilot projects to be tendered in 1990-91 construction season. End Product Specifications give the contractor more responsibility and accountability in their final end product. The quality of construction is usually better when contracts are administrated under End Product Specifications.

## Staff Training

The branch co-ordinated and conducted training courses that involved asphalt equipment operation, seal coat technology and MunMAP GIS application.

# Administrative Section

The mandate of the administrative section is to facilitate the efficient operation of Engineering Division by providing administrative support in the areas of drafting, secretarial services, data entry, budgeting, electronic technology and by coordinating the airphoto program, gravel resource inventory, and roadside development applications.

## Airphoto Library

There were two contracts for airphoto work in 1989-90. Library staff acquired 2 352 km of photography and prepared 310 mosaic sheets.

There is a continued on-going program to up-date photography of our provincial highway system. Current photographs are necessary for highway planning, design and construction.

## Roadside Development

Approximately 300 development permits were issued and 275 subdivision requests were reviewed.

## Gravel Resource Inventory

The division has information on approximately 4,025 gravel resource areas in the province. The department owns and leases approximately 1,818 gravel resource areas.

# Transportation Planning and Research Division

**Sherwin Petersen**
**Minister**
**Highways and Transportation**

**J.R. Sutherland**
**Deputy Minister**

Phil Pearson
Executive Director

Roger Couturier
Planning
Support Branch

Neil Petrovitch
Transportation
Policy Branch

Bernie Churko
Transportation
Systems Branch

George Stamatinos
Technical Research
Branch

Masood Hassan
Capital Planning
Branch

The division accommodates a wide range of issues as indicated in the mission statement.

1. To formulate policies and programs for the purpose of developing improved transportation systems for the province and to plan for a safe, efficient integrated multi-model transportation system.
2. To prepare initiatives, interventions and responses to further the best interests of Saskatchewan transportation users.
3. To provide information and specialized technical assistance to other departments and agencies of the provincial government and to communities, carriers and transportation users within the province.
4. To arrange for the provision and co-ordination of the technical research required by the department.

During the year the division participated in ongoing discussions with National Transportation Agency officials concerning the monitoring of the impacts on air transportation of the National Transportation Act. Also commercial air carrier activities affecting Saskatchewan were monitored and where necessary specific departmental and governmental strategies were developed.

A study was completed to determine the issues, information requirements, alternative strategies and an action plan concerning monitoring of the new National Transportation Act.

The division was involved in the rail line rationalization proposal jointly developed by the four western provinces.

The proposed distribution and transportation advisory program was enhanced by continual development, monitoring and networking with government and private sector people. The Container Port of Saskatchewan Corporation was assisted in negotiating with the railways on service and freight tariff.

The marine freight service on Lake Athabasca was monitored during the year, and assistance was provided to the carrier in facilitating the operation. Saskatchewan communities on Lake Athabasca generated 8,369 tons of marine freight in 1989, a decrease from the 12,390 tons in 1988. Future tonnages are not expected to exceed the 1989 tonnages.

An agreement was made with Transport Canada in which federal funds were obtained to assist in the financing of the Lake Athabasca marine service. The funding insured the continuation of the service for 1989.

A study was conducted on transportation constraints to tourism in Saskatchewan. The study provided an analysis of constraints and recommended ways of reducing the constraints or the effects of the constraints. The steering committee of the study involved people from other departments and agencies.

A comprehensive analysis of northern community access roads was completed, and recommendations were made on the type and priority of improvements. This analysis will facilitate the programming of capital improvements for these roads.

A new Railway Act was passed in 1989 enabling greater flexibility in permitting and controlling intraprovincial railways. The old act was inappropriate in terms of present day conditions.

The division was involved in the federal-provincial National Highway Policy Study. Some 24,459 kilometres were designated in Canada as the National Highway System. Of this length, 2,114 kilometres (8.7%) are located in Saskatchewan. Costs to upgrade to a minimum required standard were also determined.

Continued participation has been maintained in the Strategic Highway Research Program and the Canadian Strategic Highway Research Program. Six study sites have been selected for the SHRP studies while three sites have been chosen for the C-SHRP studies. The primary benefit from the studies will be the determination of the factors that affect long term pavement performance.

Research continued at the Estevan weigh scale site, with the installation of a variable message sign providing information to the scale user on axle and gross weights and other pre-programmed messages.

Continued development was maintained at the research test track. The primary activity was the enhancement of the data acquisition system including strain gauge accuracy. Technology exchange was made with the University of Canterbury in New Zealand and other institutions.

Policies and programs involving weight and dimension limits for trucks were enhanced to improve transportation productivity. In addition the transportation technology development program investigated various truck configurations to improve safety and productivity.

Major emphasis was placed on the road/rail demonstration project. The division provided resources in assisting in the design of the road/rail vehicle and in various negotiations with the railway companies.

P.M. Pearson Executive Director, Transportation Planning and Research Division

# Planning Support Branch

The mandate of Planning Support Branch is to improve the Saskatchewan transportation system by planning, developing and monitoring policies and programs of northern transportation and other special transportation issues, coordinating the development of legislation, and providing Division administrative support. The subsequent goals are:

- To develop appropriate policies for northern transportation in conjunction with other agencies
- To identify northern transportation demand, evaluate the present infrastructure in meeting demands, identify the level of services required and changes required to meet the demands.
- To recommend transportation projects designed to improve the northern transportation system.
- To coordinate and where required, initiate the development of new, and the amendment of existing departmental statutes and regulations. Also to coordinate, review and provide advice on extra-departmental legislation and regulations that affect departmental activities.
- To coordinate and participate in special projects on behalf of the department.
- To provide day to day administrative support services to the Transportation Planning and Research Division.

The main activities involving Planning Support Branch during the year were:

## Northern Transportation

A study was conducted on the freight haul for 1990 by barge into Saskatchewan communities on Lake Athabasca. These communities generated 8 369 tons in 1989. Stony Rapids had the greatest amount of freight at 2 877 tons. For comparison, the tonnage on the system was 12 390 and 10 939 in 1988 and 1987 respectively. The tonnage level in 1988 and 1987 was due to construction material hauled into the region for the construction of the Uranium City - Wollaston Lake power line. Unless there is a major project development, future tonnages are expected to remain approximately at 1989 levels.

An agreement was reached with the Coast Guard of Transport Canada whereby funds were obtained from the Coast Guard to assist in the financing of the Lake Athabasca marine service. This funding ensured the continuation of the level of service during 1989. The Coast Guard completed the Athabasca Region Transportation Study during the year in which this Branch was involved. The study examined the economies and the level of service that would be provided by utilization of various modes for resupply transportation into the Lake Athabasca communities.

A study was conducted on the airport at Fond-du-Lac during the year. The study assessed the capability of the present airport in providing the required service to the users of the facility. Improvements were recommended and these will be carried out over a period of time.

The long range program for upgrading of northern roads and airports was updated. This program includes new roads and airports and reconstruction of existing facilities. Coordination was maintained with Transport Canada on airport facilities and navigational aids so that federal and provincial activities would be compatible.

A policy for mine access roads in northern Saskatchewan was developed. Issues such as road management, cost allocation and interdepartmental coordination were addressed. Approval of the policy is anticipated in 1990.

A comprehensive analysis of northern community access roads was completed, and recommendations were made on the type and priority of improvements. In general the timing of road improvements are subject to funding that is available.

## Interdepartmental Liaison

Liaison was maintained with federal and provincial agencies on the various subjects within the purview of the branch. This liasion enabled the department to more effectively deal with transportation issues.

The allocation of abandoned railway rights-of-way under the "gifting" agreement was determined for all public highways in the province. This was done with the cooperation of the Department of Rural Development and enabled needed highway rights-of-way to be provided without public cost.

The branch coordinated departmental interests in provincial crown lands which were selected for Treaty Indian land entitlements. In most cases this was related to highway rights-of-way and gravel pits, although in some cases other issues were involved. Considerable research within the department was often involved, with the information being passed on to the Saskatchewan Indian and Native Affairs Secretariat.

Federal and provincial airport planning was coordinated with Transport Canada. Meetings with federal and departmental officials were held semi-annually. Information was exchanged on current and future program plans for the province.

A study was completed on transportation constraints to tourism in Saskatchewan. Provincial departments and agencies that have an interest in this topic were members of the steering committee. The study provided an analysis of constraints, and recommended ways and effectiveness in mitigating these constraints. The modes which were identified as having the greatest potential in providing service were air and highways.

A joint project with CSMA allowed the completion of an entirely new air facilities map for the province. This map will be published in 1990 and will provide valuable current information to civil aviation. The new computerized map can be readily revised for future editions.

Contact was also made with various agencies concerning environmental and northern economic development initiatives, tourism programs, handicapped persons transportation programs and various transportation subjects.

## Statutes and Regulations

The branch is responsible for coordinating proposed department legislation, regulations, orders-in-council and other cabinet agenda items.

The new Railway Act was passed during the year and was promulgated on October 16, 1989. This Act will facilitate the operation of short-line intraprovincial railways in the province.

The proposed amendments to The Highways and Transportation Act and The Engineering Profession Act were deferred pending the resolution of some issues. Amendments to these Acts are anticipated to proceed when these issues are resolved.

The coordination and preparation of various documents required for departmental regulations and orders-in-council were conducted as required.

## External Activities

A number of external activities were conduced during the course of the year. Some of the major activities involving branch personnel were chairmanship of the Systems Planning and Traffic Group of WACHO, Secretary of the WACHO conference in Regina in April 1989, and a member of the federal/provincial committee on transportation for the handicapped.

# Transportation Policy Branch

The mission of the branch is threefold:

- to formulate transportation policies for the purpose of developing improved transportation systems and services in support of the economic and social development of Saskatchewan.
- to provide information and expertise regarding extra-provincial legislation and regulations and intergovernmental transportation relations.
- to consult with and provide information and assistance to other government departments and agencies, to Saskatchewan communities and to transportation users and carriers.

During the 1989-90 fiscal year the branch maintained liaison with federal and the other provincial and private sector agencies dealing with transportation. The branch was involved in several major activities discussed below.

## Air

The branch is responsible for influencing and improving the level and quality of commercial aviation services and infrastructure affecting Saskatchewan.

During 1989-90 branch staff were involved in the following major activities:

- Participated in ongoing discussions with National Transportation Agency officials concerning monitoring the impacts on air transportation of National Transportation Act.
- Developed reports, tables and statistics on air transportation data impacting on Saskatchewan including assessing alternatives to monitoring Saskatchewan services relative to the economic deregulation of air industry in southern Saskatchewan.
- Continue to review and assess initiatives for the development of local airport authorities in other provinces as well as other initiatives for greater local involvement in the management of federal airports.
- Continued to monitor and assess commercial air carrier activities affecting Saskatchewan and where necessary developed specific departmental and government strategies including:
  - Worked extensively with industry, carriers other provincial and federal departments concerning improved local, regional, national and international air services to Saskatchewan.
- During 1989-90, a number of new services were introduced to Saskatchewan including new scheduled services to Yorkton, Swift Current and North Battleford and competitive scheduled service to northern Saskatchewan.
- The branch staff also began working with the other western provinces in the process of developing a position for a more formalized approach to provincial involvement in international air bilateral negotiations.
- Participated with other department officials as well as officials from Economic Development and Tourism and Parks and Renewable Resources on a major study on transportation constraints to tourism development in Saskatchewan.
- Continued to monitor and assess all Notices, Decisions and Orders of the National Transportation Agency respecting commercial air carrier activity in Saskatchewan.
- Continued to participate in the development of Transport Canada infrastructure in Saskatchewan through regular involvement in Saskatchewan Air Facility Meetings. The department is also represented on the Saskatoon and Regina Airport Consultative Committees.
- Established a good working relationship with members of newly created Saskatchewan Aviation Council. This council is working to promote, stimulate and encourage the development, growth and advancement of civil aviation in Saskatchewan.
- The branch staff represent the department on the Roads and Transportation Association of Canada's Aviation Committee and on a number of committees as an

Associate Member of the Air Transport Association of Canada.

## Physical Distribution And Transportation Advisory Program

This program provides a center of expertise and up to date information regarding goods distribution into, within and out of Saskatchewan. The objective is to reduce costs to Saskatchewan shippers, receivers and carriers. The goals of the program are to assist Saskatchewan business in maximizing their efficiency and profitability and to enhance the development of new domestic, export and import markets through utilization of physical distribution management techniques.

During 1989-90 branch staff were involved in the following major physical distribution activities:

- On-going development, monitoring and networking with other government and private sector people to support our center of expertise, information and human resource base on physical distribution management in Saskatchewan.
- A priority of the program is to identify deficiencies in the present physical distribution and transportation methodologies at user levels, then assisting and advising of alternatives that overcome the deficiencies.
- Maintained active memberships in national and international associations.
  - Member, Chartered Institute of Transport - Prairie and N.W.T. Section - Secretary/Treasurer;
  - Electronic Data Interchange Council of Canada;
  - Canadian Association of Logistics Management, Regional Director, Saskatchewan and Manitoba;
  - Canadian International Freight Forwarders Association; and
  - International Cargo Handling Co-ordinating Association.
- Provided consulting services to other departments, shippers, receivers and carriers on physical distribution matters.
- Distributed 400 Physical Distribution and Transportation Advisory manuals to governments, private sector nationally, internationally and provincial libraries.
- Requested by private sector and the Canadian Industrial Transportation League (C.I.T.L.) to coordinate eight civic and provincial government department's involvement in the first C.I.T.L. general meeting and Transpo Exposition held in Saskatchewan in 74 years.
- Facilitated followup activities in the development of the Container Port of Saskatchewan Corporation. Activities centered on negotiations with the railways for service and the establishment of a freight tariff.
- Resource person/speaker at meetings, conferences and workshops to promote physical distribution management.
- Developed and distributing a brochure describing the physical distribution program.

## Rail

The branch is responsible for influencing and improving the level and quality of rail service and infrastructure affecting Saskatchewan.

During 1989-90 branch staff were involved in the following major activities:

- continued to monitor and assess all Notices, Decisions and Orders of the National Transportation Agency respecting rail activities in Saskatchewan.
- held discussions with officials of the western provinces and the National Transportation Agency concerning surveys to monitor the performance of the new National Transportation Act.
- completed a study to determine the issues, information requirements, alternative strategies and an action plan concerning monitoring of the new National Transportation Act.
- discussed with the eastern provinces, the National Transportation Agency and Transport Canada, the rail rationalization proposal jointly

developed by the four western provinces.

- prepared submissions to the National Transportation Agency concerning the reconsideration of rail line abandonment applications.
- the following tables provide information on the current status of Saskatchewan branch lines.
- Contracted for the monitoring of the National Transportation Agency's Inquiry into the pricing practices of VIA Rail and the House of Commons Standing Committee on transportation review of the federal government's decision to significantly cutback VIA Rail Services.
- Monitored, assessed and prepared extensive background information concerning the federal government's decision to significantly cutback VIA Rail services across Canada including major cuts to services in Saskatchewan.

**Rail Line Abandonment Applications Currently Active under Section 160 of the National Transportation Act, 1987**

| Railway/ Subdivision | Between Points | Track Miles | Status |
|---|---|---|---|
| CN Central Butte | Moose Jaw Jct to Mawer (M. 39.37) (M. 85.00) | 45.63 | To be reconsidered by 1990 |
| CN Preeceville | Preeceville to Kelvington (M. 72.73) (M. 113.58) | 40.85 | To be reconsidered by 1990 |
| | **CN Total Miles** | **86.48** | |

**Rail Line Abandonment Between April 1, 1989 and March 31, 1990**

| Railway/ Subdivision | Between Points | Track Miles | Status |
|---|---|---|---|
| CN Acadia Valley | Eyre Jct to Acadia Valley (M. 0.00) (M.70.30) | 23.67 | Ordered abandoned July 1/1989 |
| CN Avonlea* | Parry to Avonlea (M. 29.1) (M.51.45) | 21.64 | Ordered abandoned November 28, 1989 |
| CN Chelan | Reserve to Weekes (M.0.00) (M.12.87) | 12.87 | Ordered abandoned June 6, 1989 |
| CP Colony** | Rockglen to Killdeer (M.0.00) (M.24.60) | 24.60 | Ordered abandoned August 3l, 1989 |
| CN Corning | Peebles to Corning (M.0.00) (M.14.40) | 14.40 | Ordered abandoned December 31, 1989 |
| CN Erwood | Baden to Hudson Bay (M.50.85) (M.100.00) | 49.15 | Ordered abandoned January 2, 1990 |
| CP Kisbey | Griffin to Weyburn (M.43.60) (M.60.90) | 17.30 | Ordered abandoned December 23, 1989 |
| CP Neudorf | Rocanville to Esterhazy (M.53.50) (M.82.00) | 28.50 | Ordered abandoned June 2, 1989 |
| CN Porter | Oban Junction to Cando (M.0.00) (M.18.00) | 18.00 | Ordered abandoned December 31, 1989 |
| CP Shamrock | Archive to Tyson (M.0.00) (M.70.30) | 70.30 | Ordered abandoned December 21, 1989 |
| | **CN Total Miles** | **139.73** | |
| | **CP Total Miles** | **197.10** | |

*In operation as a short line railway
**Purchase by a short line railway operator under negotiation

# Capital Program Planning Branch

The mission of the branch is:

- to identify and assess present and future demands for provincial highways, provincial and municipal airports, urban transportation assistance and rural transit assistance in Saskatchewan.
- to develop, monitor and evaluate strategic and short-range responses to these demands in terms of capital programs.

## Major Activities

### Capital Programming

The proposed five-year construction program was reviewed and developed for the period 1990 to 1994. A concerted effort was made to meet with the districts and discuss capital construction priorities during the process.

The branch co-ordinated the submission of the 1990-91 capital program and budget to Treasury Board. As in other years this involved extensive consultation and liaison with Engineering and Operations Division. After numerous reviews and different submissions, the capital budget for the department was approved at $109.34 million representing a $12 million decrease over the 1989-90 capital budget.

Work began on the identification of long range capital construction needs. A preliminary identification and priorizing of needs for four-laning, pavement construction and low volume road construction was done. These needs and method of priorizing were discussed with the districts. More work is planned in this area for next year.

### National Highway Policy Study

The branch director represented the province on the Federal/Provincial/ Territorial National Highway Policy Study Committee. Branch staff developed Saskatchewan's submissions to the study.

The report for Phase-1 of the National Highway Policy Study, published in late 1988, designated 24,459 km of Canada's major highways as the National Highway System. Of this length, 2,114 km (8.7%) are in Saskatchewan — comprising Highway No. 1 (entire length), Highway No. 16 (entire length), Highway No. 11 (Regina to Saskatoon), Highway No. 7 (Saskatoon to Alberta border) and Highway Nos. 6 and 39 (Regina - Weyburn - Estevan - U.S. border).

Phase-2 report, published in January 1990, estimated the costs and impacts of upgrading the National Highway System to minimum required standards.

Phase-3 expected to be completed by June of 1990, will review highway funding mechanisms in various countries.

### Strategic Planning

The branch director participated in the corporate-level strategic planning process resulting in revised statements of the department's mission, goals, objectives and strategies. The branch director was on special assignment from mid-January to mid-June 1990 as the facilitator of the strategic planning process for all divisions.

### Canadian Strategic Highway Research Program (C-SHRP)

The branch participated in the C-SHRP and SHRP programs in conjunction with Technical Research Branch. The branch provided interim planning and coordination of activities including; selection of test sites, material sampling, site preparation, data collection and signing and marking.

### Programming and Planning Studies

Work continued on the review of the Pavement C policy through an inter-branch committee. The final report and recommendations have been submitted to senior management for review. Subsequently, the branch prepared a report on the cost implications of the proposed policy.

A study to determine the need for truck rest stops on major highways was initiated. Completion is scheduled for May 1990.

Work was completed on a review of the department's Illumination Policy through an inter-divisional committee. A report and recommendations have been submitted for approval.

### Urban Transportation Planning

Professional engineering input was provided on a wide range of urban transportation issues confronting the department. Branch staff participated on the steering committee for the Regina Transportation Study and the Victoria Street East Transportation Impact Study in Regina.

### Pavement Management Information System (PMIS)

The pavement management information system being developed by the department will evaluate reconstruction as well as rehabilitation strategies for the highway system. This branch is co-chairing the steering committee with Surfacing Branch and is actively involved on the working committee. Areas of PMIS in which the branch is most actively involved are reconstruction program simulation and road-user costs.

During 1989-90, testing, debugging and refining processes were commenced. Additional testing and implementation will be undertaken in 1990-91.

### Grid Road Takeover Policy

Since May 1, 1984 the department has implemented a Grid Road Takeover Policy which stipulates minimum criteria that must be met before a rural municipal road would be considered by the department for inclusion into the provincial highway system.

During 1989-90, thirty grid road takeover requests were evaluated with respect to the policy. Two grid roads for a total of 13.8 kilometres were brought into the highway network.

### Inventories and Statistics

The branch maintains the highway-railway grade crossing inventory which is used to establish an annual list of candidates for installation of automatic signals.

The branch also compiled the annual lengths and expenditure statistics for Statistics Canada and the Roads and Transportation Association of Canada and responded to information requests from the Canadian Automobile Association and the Saskatchewan Trucking Association.

### Computerized Mapping

The branch began using "MunMap", an application of Geographic Information System (G.I.S.) tailored to highway transportation. The system obtains information from existing or new databases and plots this information on a 1:1,000,000 scale map. This system has been used in the branch to produce several electronic maps (eg. upgrading needs on the National Highway System in Saskatchewan). We are working to expand other PC-based databases for use with MunMap for other planning functions.

### Professional Publications

The branch staff were involved in the following publication during 1988-89.

1. Hassan, M.U. and Hossack, M.A. "Employment Implications of Highway Expenditures", Proceedings of the Roads and Transportation Association of Canada Conference, Calgary, Alberta, September 1989.

## Technical and Specialist Services

A significant proportion of staff resources was utilized to provide specialist advice and assistance to senior management, other units of the department and extra-department units on matters related to highway planning, location and design standards, airport planning and classification, urban transportation planning, and policies related to capital programs.

Examples of such activities include the preparation of briefs, letters and background papers pertaining to the Saskatchewan Association of Rural Municipalities, Saskatchewan Urban Municipalities Association, Yellowhead Highway Association, Saskatchewan Roadbuilders, urban and rural municipalities, members of the public, and federal and provincial governments.

# Transportation Systems Branch

The mission of the branch is to develop and recommend policies, administer programs, and provide specialized technical assistance leading to improvements in cost effectiveness, safety and adequacy of surface transportation systems.

## Road Section

### Bulk Commodity and Timber Transportation Policy

The road section staff negotiated several new agreements with shippers regarding industrial truck hauls pursuant to these policies. These included agreements with Federated Cooperatives Ltd., as well as several logging contractors in northern Saskatchewan. There were several major revisions to Truck Haul Operating Plans from existing agreements related to new vehicle configurations, weight and dimension adjustments and road fees. These included the operating plans for the Weyerhaeuser Canada Ltd. pulp haul at Prince Albert and the International Minerals & Chemicals Corp. (Canada) Limited potash haul at Esterhazy. The staff continued to administer all of the industrial truck haul agreements.

In an effort to improve the efficiency and convenience of obtaining logging permits a new permit format was developed. Carriers can now obtain their winter permits from the companies they work for as soon as the department gives approval to use the winter highway system.

### Overlength Vehicle Program

Several new configurations were analysed and approved for use under the terms and conditions of the Overlength Vehicle Policy. This included use of the extended "B" train as well as the reverse rocky mountain double configuration. Staff continued to administer the program and monitor the performance of all participating carriers.

Staff also commenced a study to examine opportunities for providing more access to two lane highways during off peak hours for carriers operating long combination vehicles.

### Interim Weight and Dimension Adjustment Program

This program enables commerical carriers to obtain permits to operate eight axle "A" and "C" train combination trailer units at weights of 62.5 tonnes depending on hitching hardware used. Staff continued to administer the program throughout the year and issue permits as required.

### Aggregate Transportation Policy

The department has entered into several agreements with rural municipalities enabling them to obtain permits for crossing provincial highways while hauling gravel at weights in excess of legal limits. The program is ongoing and will remain accessible to all rural municipalities.

### National "C" Dolly Specification

Staff continued to work with the National Research Council and RTAC in the development of design, operating and maintenance specifications for dual drawbar "C". The study was completed in the summer of 1989. Recommendations were made to the Transport Ministers when they met in Calgary in September 1989. Individual provinces are now preparing interim regulations related to the "C" train that will apply until the federal government has implemented a national regulation that will apply to all of Canada.

### Transportation Technology Development Program

The road section administered the road segment of the Transportation Technology Development Program which is designed to encourage the private sector to pursue new technologies for the movement of bulk commodities on the highway system. The thrust of the program is to improve safety, productivity, and extend the service life of highway infrastructure. Staff from the road section were involved with the following projects:

- Stabilizer Arm Tandem Dolly Convertor Project
  - — Staff worked with Advance Engineered Products Ltd., Westank-Willock, and Kleysen Transport Ltd. in the design and installation of a rear trailer

stabilizer arm on a combination trailer unit equipped with a tandem axle dolly convertor. The concept is currently being evaluated and a report is anticipated in the 1990/91 fiscal year.

- Controlled Steering "C" Dolly
  - The University of Michigan Transportation Research Institute was commissioned to design and construct a mechanical steering mechanism that can be used in conjunction with a dual drawbar "C" dolly equipped with a turntable style steering axle assembly. A dolly convertor owned by Rempel Trail Transportation Company was sent to Michigan and the new steering system was installed on it. The unit will be put into service in May of 1990 and evaluated in the next fiscal year.
- Tri Axle Drive Power Unit
  - Discussions are still underway with several carriers regarding the development of a highway tractor with three driving axles all located at the rear of the vehicle. The unique feature of the concept is that one of the rear driving axles is steered mechanically, a prerequisite for satisfactory performance of a power unit equipped with three driving axles. It is anticipated that a prototype may be put in service next fiscal year.
- Auto Locking "C" Dolly
  - Staff in conjunction with Advance Engineered Products Ltd. and Federated Cooperatives Ltd. have designed and constructed two prototype locking devices for self steering "C" dollies. This device senses vehicle speed at the wheel of the dolly convertor. When the vehicle exceeds a speed of 50 kmph the mechanism drives a pin into the steering linkage of the axle that prevents it from steering. Two convertors were equipped with the sensing device and are currently being evaluated.
- Logging Trailer Retrofitting
  - Staff continued to work with Saskatchewan Research Council, local trailer manufacturers and the logging industry in developing a method for converting tandem axle logging trailer to either a tri or quad axle configuration. Approximately 50 trailers were retrofitted this year. These vehicles are currently working in the logging industry in northern Saskatchewan.
- Miscellaneous Vehicle Evaluation
  - The road section held discussions with the private sector regarding the possibility of developing other new concepts in the transportation equipment for the logging and petroleum industry. Several of these concepts could result in field demonstration projects in upcoming years.

## Rail Section

### Track Loading Study

A study to determine the maximum loading of low volume, slow speed prairie branch lines was commenced in March 1990 in conjunction with the road/rail project. The study will examine specific track structure improvements and determine the corresponding increased loading capacity and maximum speed for safe operations during all seasonal conditions. The first phase of the study, completed this year, involved the determination of the maximum loading on the two rail lines used for the road/rail project using a computer simulation program. Phase 2 of the study to be undertaken in 1990-91 will involve instrumentation of the two lines under investigation in order to validate the computer model.

### An Analysis Of The Contribution Levels For Saskatchewan Rail Traffic

The rail section completed its analysis of the rail freight rates charged for traffic originating in Saskatchewan compared to the long run variable costs incurred by the railways to transport the same traffic. The study concluded that rail freight rates charged for Saskatchewan

commodities were substantially higher than their associated long run variable costs and that the contribution by Saskatchewan traffic was excessive relative to the national rail system average contribution. A final report has been submitted to senior department officials.

### Railway Costing Review

Under the Western Grain Transportation Act the federal government undertakes a four year review of railway costs to determine the freight rates for moving grain. Several submissions were filed by the rail section countering those of CN and CP Rail. The submissions contributed to a cost savings to Western Canadian producers estimated to be worth $120 million. One argument put forward enabled producers to save some $22 million annually in reduced freight rates. This particular issue was successfully argued by the western provinces in the Federal Court of Appeal.

### Saskatchewan Railway Act

A new Saskatchewan Railway Act, replacing the current 1906 Saskatchewan Railway Act was passed and proclaimed in the provincial legislature. The Act is drafted to respond to current rail transportation requirements of the province. The development of engineering and operational regulations, pursuant to the Act was initiated.

### Western Low Sulphur Coal To Ontario Initiative

Western Canadian coal accounts for a small portion of Ontario Hydro's fuel consumption. An Action Committee consisting of the Deputy Prime Minister and the Premiers of Ontario, Saskatchewan, Alberta, and B.C. was formed to investigate ways of increasing the use of Western Canadian coal by Ontario Hydro. An Intergovernmental Secretariat to the Action Committee commissioned numerous studies looking at the feasibility of improving the competitiveness of Western Canadian coal. Saskatchewan Energy and Mines was the Province's representative on the Secretariat. In 1988-89 the rail section, on behalf of Energy and Mines, participated in four intergovernmental studies looking at coal transportation costs and attempting to identify areas where these costs could be reduced. The four studies included: Taxes and Regulatory Costs on Rail and Pipeline Traffic, Laker Transportation, Thunder Bay Terminals, and Railway Efficiencies and Impediments in the Carriage of Western Coal to Ontario. Another study, Project C-6, was commenced in 1989-90 to look at cost comparisons between Canadian and American railways in the movement of low sulphur coal to Ontario. This study is expected to be completed mid-way through 1990-91.

### Transportation Technology Development Program

The rail section administered the rail portion of the Transportation Technology Development Program. Major emphasis has been placed by the section on implementing the road/rail demonstration project. The road/rail concept involves the use of a hybrid hi-rail tractor capable of travelling on existing roads and moving onto branch lines for spotting and picking up grain cars at elevator points along the line for interchange with a main line carrier. The road/rail vehicle is new technology developed in the province to improve the efficiencies of moving grain off low volume - high cost branch line. The purpose of the demonstration project is to assess the feasibility of this concept in actual grain collection.

A specialized truck unit was purchased and work was initiated to modify this unit into the road/rail vehicle.

With assistance from the rail section, Southern Rails Cooperative Ltd., a producer owned cooperative purchased the Avonlea South Subdivision (Avonlea to Parry) from CN Rail and commenced short line operations. Negotiations with the federal government for funding of the operation were completed. Negotiations with CP Rail for the purchase of the Colony Subdivision from Killdeer to Rockglen continued.

### General Consultative Services

The rail section continues to provide information and consultative services by responding to new and revised federal legislation and queries from provincial and federal groups, industry and the general public.

# Technical Research Branch

The mission of the branch is to facilitate and co-ordinate technical research and development activities in support of Saskatchewan Highways and Transportation priorities.

Specific objectives of the branch are:

- To lead and co-ordinate technical research and development directed at improving Saskatchewan's highways and other provincial transportation facilities
- To make recommendations and/or provide assistance in implementing and developing new equipment, methods, materials and procedures
- To improve transportation safety to reduce the incidence and severity of accidents
- To support research and development of Saskatchewan materials and manufactured products for application in the transportation sector
- To develop and utilize the pavement test track for accelerated testing and to provide fundamental knowledge of highway materials behavior
- To encourage, monitor and participate in technical research activities involving other agencies and organizations
- To support technology transfer by disseminating research and development information and providing a forum for technical exchange.

The Technical Research Branch provided technical and administrative support to the Interdivisional Committee to Prioritize Research (ICPR). The ICPR was created to co-ordinate the department's research activities, thereby ensuring equity in resource availability, preventing duplication, monitoring progress of projects, and promoting utilization of research findings. In addition to monitoring the current projects, the ICPR received a total of 55 research proposals which were reviewed to establish the project list for the 1990/91 year.

## Materials Research

Materials research accomplishments included completion of six long term projects, initiation of eight new projects, continuing data collection and evaluation of others, assistance with the test track upgrading, and the preparation of technical reports and documents.

Final reports/bulletins were prepared for the following projects:

- variable pavement thickness test section, control section 2-09
- thin overlay test section, control section 6-08
- evaluation of the use of asphalt rejuvinators with the Sandvik blade
- matrix soil suction measurement using the pavement test track facility

Data collection and performance evaluation continued for the following projects:

- temperature correction factors for Benkelman Beam deflection measurements
- insitu moisture/density and soil suction evaluation over time, control section 334-02
- premium asphalt test section
- performance of asphalt concrete overlays
- use of the Kriging technique to improve the accuracy of determining quantity and quality of gravel deposits
- use of a bearing capacity approach in the design of highway pavement structures
- slurry seal test section
- rutting study

The branch continued to provide technical specialist advice and services relating to hot asphalt recycling, materials testing procedures and pavement design.

## Transportation Research

The transportation research accomplishments included the continuation of five projects, the completion of five projects, the preparation of terms of reference for one project, as well as the provision of technical advice and services.

Data collection and monitoring continued as part of the "Innovative Traffic Monitoring Technology" program and as part of the requirements for participation in the Strategic Highway Research Program (SHRP). The "piezo-electric" weigh-in-motion/vehicle classifier system on Highway No. 11 was continued to be monitored; the system was also used in conjunction with a study undertaken to evaluate the effects of different installation techniques for piezo-electric strips. Evaluation of a prototype "load cell" weigh-in-motion system, installed on Highway No. 1, was completed. Traffic counter/classifier (TC/C) systems were installed at four additional sites as part of the SHRP traffic data acquisition program.

Work continued with the Estevan weigh scale technology package, with the addition of a "flip disk" variable message sign and supporting software required to integrate it with the scale's computer system. The variable message sign shows axle weights and enables the scale attendants to relay pre-programmed messages to the truck drivers.

The following projects were completed and final reports submitted:

- Traffic counter/classifier evaluation
- Evaluation of potential for correlation of CRM, PURD, Profilometer and Dipstick
- Measurement and recording traffic sign reflectivity
- Evaluation of cable guard barriers and options for height modification to accommodate pavement rehabilitation
- Assessing the operating characteristics of passing lanes

Work was initiated on the following projects and will continue into the next year:

- Development of a cable barrier tensiometer
- Development of a cost-effective high speed road profiler
- Technology to improve safety for maintenance workers
- Traffic sign reflectivity monitoring and data base development
- Development of a method for forecasting truck loadings on the highway system
- Test and evaluate traffic actuated deer crossing warning systems
- Joint highway research program with the University of Saskatchewan

Technical advice and services were provided on matters pertaining to traffic safety, traffic monitoring, and systems analysis. The branch also provided technical assistance in the development of software necessary to reformat data from the SHRP and C-SHRP sites to be consistent with the department's traffic data collection formats.

## Test Track

The department continued with the development of the first environmentally controlled test track of its kind in the world. Test track activities included continuation of the upgrading program, participation in a technology exchange with the University of Canterbury (New Zealand) and the Chongching Highway Research Institute (People's Republic of China), as well as evaluation of sensing equipment in the controlled environment.

Work has continued on the development of the data acquisition system, including an experiment to evaluate the degree of accuracy which is attainable from the strain gauges when installed in a pavement structure. The supporting electronic boards necessary to provide simultaneous deflections over several pavement and subgrade layers were designed, and prototypes were constructed.

### Strategic Highway Research Program (SHRP)

The department continued its involvement in the international research program with the six test sections approved as part of the General Pavement Studies (GPS) portion of the Long Term Pavement Performance (LTPP) program component of SHRP. The sites are located as follows:

- two sites on Highway No. 9 north of Whitewood
- one site on Highway No. 9 south of Whitewood
- two sites on Highway No. 11 south of Saskatoon

- one site on Highway No. 16 east of Plunkett

The department also initiated two new sites for maintenance evaluation as part of the Specific Pavement Studies (SPS) program. The sites are located south of Whitewood and east of Plunkett, adjacent to the GPS sites.

Coring and test pit excavation was completed for two of the sites and arrangements were made to complete the remaining sites in 1990. Extensive historic data pertaining to maintenance, traffic and environment conditions was compiled. Traffic data collection equipment was installed on Highway No. 16.

The branch provided further support to the SHRP program by providing information on department procedures in the asphalt, operations and structures research areas.

### Canadian Strategic Highway Research Program (C-SHRP)

The branch has been responsible for co-ordinating the activities relating to C-SHRP. The test sites are located as follows:

- Highway No. 10, south-east of Yorkton
- Highway No. 1, west of Indian Head
- Highway No. 5, east of Humboldt

Coring and bulk sampling was done on these sites, with the laboratory testing scheduled for early in 1990. Traffic data collection equipment was installed at all three sites; calibration will be after the units have had sufficient time in the roadway to confirm proper operation.

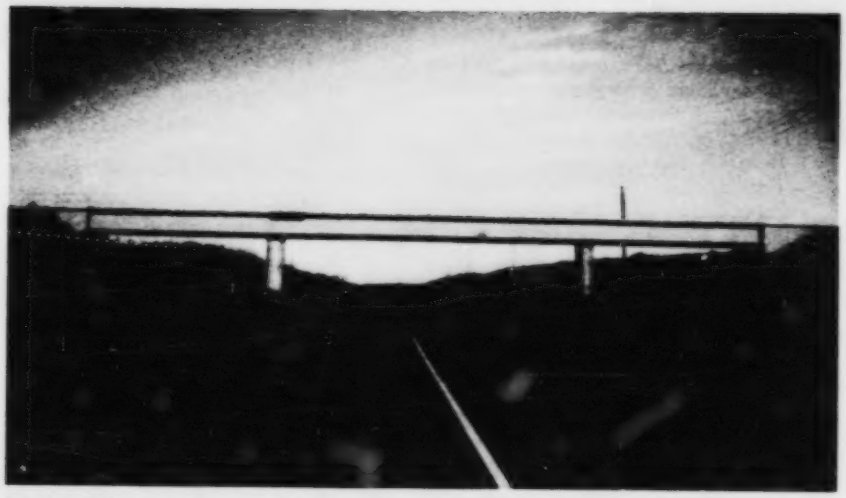
The department is continuing to support the program by nominating individuals to sit on committees, providing test sections, and gathering information. The department's involvement extended to include the pavement response study, the bridge deck rehabilitation study, the removal of hazards due to ravelling of granular shoulder material study, the corrective measures for surface defects study, as well as the development of data collection forms and identification of collection processes.

## Technology Transfer

The branch's quarterly newsletter provided an important forum for the presentation of information about the department's research program as well as specific projects within the program. The newsletter was distributed within the department, to other provincial highway agencies, and to academic institutions.

The branch also participated in information exchanges by:

- publishing technical bulletins summarizing the analysis and findings from the variable thickness pavement test section, the static loading of pavement at the test track, and the thin overlay test section
- preparing of a paper about the test track. The paper was presented at the Technology Transfer session of the WACHO conference
- initiating information meetings for department representatives interested in the SHRP and C-SHRP programs
- participating in conferences, technical societies, Roads and Transportation Association of Canada committees, and sub-committees of C-SHRP



Borden Subway built as part of Yellowhead Agreement on Highway No. 16.

# Regulation and Traffic Safety Division

**Sherwin Petersen**
**Minister**
**Highways and Transportation**

**J.R. Sutherland**
**Deputy Minister**

The Regulation and Traffic Safety Division is committed to excellence in motor vehicle safety and transportation services.

Under this mandate, the division performs support functions for the Highway Traffic Board by developing policy options for possible implementation, administering the daily functioning of the Board, and by requesting or implementing Board decisions.

The division is also responsible for the development, implementation and delivery of enforcement, safety and transport regulation initiatives for the department.

Applications for extra-provincial authority and non general merchandise intra-provincial authority continue to be processed in accordance with the reverse onus criteria. Applicants and all existing authority holders continue to be reviewed for the issuance of safety ratings under the National Safety Code.

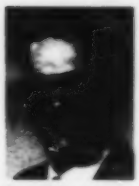
Regulations necessary for the full implementation of National Safety Code standards in Saskatchewan continue to be developed.

During the year, the division participated actively in strategic planning exercises conducted by the department.

W.R. McLaren
Executive Director
Regulation and Traffic Safety
Division

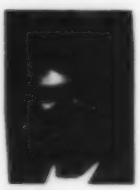
Bill McLaren
Executive Director

Dave Stewart
Director
Transportation
Legislation and
Safety Branch



Ron Blackburn
Director
Motor Carrier
Regulations
Branch

Barry Wesler
Director
Transport
Compliance
Branch



Phyllis
Glowatsky
Director
Board Affairs
and Support
Services Branch

# Board Affairs and Support Services Branch

The Board Affairs and Support Services Branch has the responsibility for providing administrative support and services for the Regulation and Traffic Safety Division as well as the Board Secretariat functions for the Highway Traffic Board.

The administrative support for the staff of the division involves procurement of equipment, uniforms and supplies, invoicing, processing printing requisitions, controlling inventory, processing expense statements for members of the Board, monitoring budgetary allocations for the division and co-ordinating personnel related matters with the Human Resource Branch.

The Board Secretariat function for the Highway Traffic Board involves the planning, organizing, co-ordinating and managing of activities for the Board members, such as:

- preparing agendas, files, policy proposals and other related material.
- planning, arranging and scheduling appeals on driver suspensions or S.G.I. related decisions, public hearings relating to operating authority applications and meetings to obtain public input or provide information.
- providing technical and professional advice and consultative services to solicitors, shippers, carriers and others respecting matters dealt with by the Board.
- preparing, distributing and implementing in a legally correct manner, all Board decisions, orders or directives.

The Motor Carrier Committee of the Board held 24 regular meetings in 1989 and dealt with 1,384 items. The Traffic Safety Committee heard one appeal as a result of a medical suspension, eight appeals on short term suspensions imposed by S.G.I. and 74 appeals for restricted licences because of impaired driving suspensions. Of these 74 applications, six failed to appear, 12 were denied and 56 were issued restricted licences.

Responsibility for the department's enquiry line was assumed in June 1989 and for the six month period to December 31, 1989, staff handled 3,737 calls.

# Motor Carrier Regulations Branch

The Saskatchewan Motor Carrier industry is subject to regulations designed to enhance freight and passenger services to Saskatchewan residents. The main program areas include:

## Operating Authorities Section

Operating authority administration involves processing motor carrier applications for new authorities.

While the ease of entry process was introduced in 1986, the Board continues to receive a substantial number of applications: (1987/88 - 299, 1988/89 - 277 and 1989/90 - 251). All well, all extra-provincial applications and non-general merchandise intra-provincial applications continue to be processed under reverse onus criteria. Since December 1989, the requirement of shipper support was eliminated for extra-provincial applications resulting in a significant increase in the number of reverse onus applications.

The following statistical table shows the level of operations within the section:

| Type | 1987 -88 | 1988 -89 | 1989 -90 |
|---|---|---|---|
| Ease of Entry | 299 | 277 | 251 |
| Reverse Onus | 239 | 371 | 533 |
| Public Convenience & Necessity | 121 | 41 | 55 |
| **Total** | 659 | 689 | 839 |

## Motor Carrier Fitness Section

One of the policies of the Highway Traffic Board is to promote compliance with all transport laws and regulations by those involved in the motor carrier industry.

A central registry of all transport law violations, along with a recording of the violators is maintained, and continuously reviewed. In accordance with predetermined levels, registration and/or authority holders are subject to action in the form of warning letters and counselling sessions.

During the past year, letters were forwarded to 20 carriers providing a brief description of the Compliance Review Program and procedures. The letter also requested that the carrier provide us with operational data to ensure our records were correct.

Carriers making new applications for authority had their records under the Compliance Review Program reviewed. No carrier was asked to meet with the Board or the Compliance Review Committee as a result of its Compliance with transport law. This encouraging trend is a reflection of carriers' wishes to enhance their opportunities in Saskatchewan as well as throughout Canada in light of National Safety Code requirements.

The section will assume the responsibility of the Administrator of the Driver/Carrier Profile in 1990/91 in accordance with the NSC initiative.

## Central Permit Office Section

A Central Permit Operation has continued to service the motor carrier industry on a round-the-clock basis. Permit authorizations for operating authorities, fuel tax, vehicle registrations, and weight and dimension authorities are provided.

The new Automated Permit System (APS) commenced operation September 1989; this system is a joint venture between the CPO and the Maintenance Branch.

The combined CPO and APS operations has issued 376,479 permits generating $20,044,757 revenue.

| Year End | Number of Permits | Permit Revenue |
|---|---|---|
| 1983 | 42,617 | $ 1,946,298 |
| 1984 | 55,162 | 2,420,341 |
| 1985 | 54,956 | 2,679,605 |
| 1986 | 51,141 | 2,572,190 |
| 1987 | 55,966 | 3,019,209 |
| 1988 | 52,893 | 3,504,758 |
| 1989 | 63,744 | 3,902,356 |
| **Total** | 376,479 | $20,044,757 |

# Transportation Legislation and Safety Branch

The mission of this branch is to develop provincially, and influence nationally, motor carrier policies, taxation and legislation.

During this fiscal year, the branch continued to develop National Safety Code legislation and co-ordinated a conceptual design for the Saskatchewan Safety and Fitness Program for commercial carriers. Also, branch staff supported industry efforts to improve transport services. System modifications were made to the data system supporting the Carrier Compliance Review Program and bus express rates and liability insurance amendments were approved by the Board.

The branch is divided into four sections:

## Safety and Legislation Section

The section continued to co-ordinate legislative and regulatory developments for the division.

In June 1989, the Legislative Assembly passed amendments to The Highway Traffic Act. Included in the amendment was a provision authorizing random spot checks by police officers. This amendment will assist the police in reducing the extent to which people drink and drive.

Also included in the amendments were provisions authorizing regulations respecting hours of service and trip inspection reports for larger commercial trucks and buses. By year end, these regulations were being developed.

This section worked with various groups to improve snowmobile and school bus safety programs.

In the fall of 1989, the section helped organize the distribution of proposed regulations dealing with security of loads for commercial trucks. A variety of responses were received from concerned individuals, the police, and trucking companies. Final proposals were under development at the end of the fiscal year.

The section participates in the work of the Saskatchewan Safety Council's Traffic Division.

## Vehicle Registrations and Permit Section

This section is responsible for vehicle registration policies and legislation affecting 815,000 vehicles registered in Saskatchewan. This includes establishing the allowed uses and associated fees for various registration classifications. This section is also responsible for developing and maintaining reciprocity agreements, national registration standards and monitoring the delivery of the registration system by Saskatchewan Government Insurance.

**Number of Vehicles**

| Description | Registered |
|---|---|
| Public Service | 2,260 |
| Public Service - Rural General Merchandise | 207 |
| Commercial Vehicle C | 15,667 |
| Commercial Vehicle D | 30,740 |
| Farm Truck | 164,362 |
| Private Vehicle | 494,663 |
| Private Trailer | 78,066 |
| Commercial Trailer | 12,901 |
| Passenger PSV Bus | 227 |
| Passenger City Bus | 412 |
| Passenger School Bus | 3,348 |
| Taxi | 639 |
| Motor Toboggan | 5,973 |
| Licensed Auto Dealer | 3,500 |
| Licensed Trailer Dealer | 88 |
| Federal Government | 1,996 |
| Total | 815,049 |

## Dangerous Goods Transportation Section

The section is working with the transportation industry and others to ensure stakeholder concerns and problems are identified and addressed.

In conjunction with the Saskatchewan Trucking Association, this section is participating in the presentation of a dangerous goods transportation instructor's course. This course is aimed at safety personnel who in turn teach handlers and drivers how to comply with the regulations.

This section continues to review and recommend regulatory amendments. Recent changes effected the transportation of wastes.

The section also trains and designates dangerous goods inspectors with Transport Compliance staff, Urban Municipalities and the RCMP. The co-

ordination of enforcement activities is also the responsibility of this section.

The section continued to participate in public awareness events to ensure that the public and industry are provided with an opportunity to learn about the dangerous goods transportation program. Enforcement agencies, emergency responders and other government departments have continued to consult with this section and on-going assistance has been provided.

## Program Development and Support Section

This section responsibilities are:

- develop and evaluate programs and provide research and analytical support to other sections, branches and the Board;
- provide advice on the design and development of program computer systems. Recommend appropriate hardware and software and maintain division-owned systems;
- evaluate filed and prescribed rate proposals for freight and passengers, develop conditions of carriage and set insurance requirements.

As per shipper and carrier agreements, this section recommended an increase in general merchandise rates for intra-provincial movements of 3.17% and 2.85% in September 1989 and March 1990, respectively. Amendments to bus liability insurance and express rate levels were also recommended.

Enhancements to division owned information systems was also made.

# Transport Compliance Branch

This branch is composed of Saskatchewan Highway Transport Patrol and Transport Investigation Units who police and serve the road transportation industry.

The mandate of this law enforcement group is to promote compliance with rules which protect highways and the people who use them and to govern the movement of vehicles, goods and passengers. Primarily, officers interface with the bus/truck industry, but they have the authority to promote highway safety for all vehicles by taking action on flagrant violations when encountered.

For organizational purposes, the province is divided into two geographic regions. Within these regions, uniformed staff are employed to patrol the highways and to staff 14 permanent weigh scales. These activites are conducted around the clock. Investigative staff operate from the major centres. They conduct investigations into road transportation complaints and conduct audits on individual carriers.

The primary consideration of both is the enforcement of laws and regulations covering vehicle and driver safety, weights and dimensions and economic regulation (operating authority and registration). While carrying out their duties, staff conducted 186,628 inspections, 16,362 consultations and 1,145 investigations with industry during the year.

**Summary of Inspections and Violation Rates (89/90)**

| Type of Inspections | Location of Inspections | Number of Inspections | Violation Rates |
|---|---|---|---|
| Economic Regulation | At Weigh Scales | 18,453 | 6.9 |
| | On Patrol | 9,254 | 11.9 |
| Weight and Dimension | At Weigh Scales | 126,304 | 1.3 |
| | On Patrol | 5,849 | 15.6 |
| Safety | At Weigh Scales | 12,810 | 20.6 |
| | On Patrol | 13,958 | 41.2 |
| **Total Weigh Scale Inspections** | | | 157,567 |
| **Total Patrol Inspections** | | | 29,061 |
| **Total Inspections** | | | 186,628 |

This branch has been promoting compliance with dangerous goods transportation laws on Saskatchewan highways. All officers are trained and certified as dangerous goods inspectors for Saskatchewan. Their duties include inspection of drivers, vehicles, cargo, documentation and the display of safety marks.

During 1989/90, officers conducted extensive inspections under the Commercial Vehicle Safety Alliance (C.V.S.A.) Program in Saskatchewan.

This international organization is devoted to promoting safer commercial vehicles on all North American highways through roadside inspection. Vehicles which pass inspection are awarded decals which are recognized by other jurisdictions. Unsafe vehicles are placed "out-of-service" until necessary repairs are made. "Standard inspections" consist of 52 items of examination while "walk around inspections" include 23 items.

**C.V.S.A. Inspection Summary (89/90)**

| | Number Conducted | Decals Issued | Pass Rate | Vehicles With Defects |
|---|---|---|---|---|
| Standard Inspections | 2,462 | 1,246 | 50.6 | 1,216 |
| Walk Around Inspections | 4,161 | N/A | 58.3 | 1,736 |

In May and August of 1989, concentrated enforcement blitz's were conducted at the Lloydminister Weigh Scale and North Portal. Both major blitzes were successful in that unsafe trucks were taken out of service and/or repaired, thus ensuring safer Saskatchewan highways for all users.

## Carrier Audits

1989 saw the introduction of a commercial carrier audit program with guidelines developed through the National Safety Code. Under this program, 88 safety review audits were carried out. Officers conducted introductory sessions with carrier representatives and they delivered a major presentation on the program to the Saskatchewan Trucking Association's annual convention at Regina.

## Recap of Charges and Written Warnings

Of the charges and written warnings issued during the year, approximately 45 per cent went to carriers and drivers based outside the province. This reflects the high level of trucking into and through Saskatchewan from other provinces and states.

| | |
|---|---|
| **Economic Regulation** | |
| Operating Authority | 452 |
| Registration | 2,737 |
| **Subtotal** | 3,189 |
| **Weight and Dimension** | |
| Overweight | 2,878 |
| Overwidth | 401 |
| Overlength | 49 |
| Overheight | 107 |
| Other | 218 |
| **Subtotal** | 3,653 |
| **Vehicle and Driver Safety** | |
| Dangerous Goods | 128 |
| Vehicle Offences | 7,110 |
| Driver Offences | 3,033 |
| Miscellaneous | 282 |
| **Subtotal** | 10,553 |
| **Total** | 17,395 |

# Support Services Division

**Sherwin Petersen**
**Minister**
**Highways and Transportation**

**J.R. Sutherland**
**Deputy Minister**

Support Services Division provides quality administrative and support services to the department through people committed to excellence in the work they do.

Functional services include:

- staffing
- personnel management and training
- financial management and control
- management and administrative systems
- computer services
- property acquisition
- property management

The division undertook an examination of its role during the past year. With a renewed focus on its mission, and the commitment of the staff, better and improved services were provided to assist other department units in meeting their goals.

Details of specific services and accomplishments are provided in the following individual branch reports.

Paul Fitzel
Executive Director
Support Services Division

Paul Fitzel
Executive Director

Steve Pillipow
Human Resource
Branch

Art Lowey
Property Services
Branch

Colleen Laing
Financial
Services
Branch

Dennis Domeny
Management
Services Branch

# Human Resource Branch

Human Resource Branch is a "people-oriented" service unit providing services in the area of:

- labour relations
- recruitment
- classification
- training and development
- records management
- occupational health and safety

The branch's mission statement is:

"To promote excellence in human resource management and provide related specialized functions to meet the needs and challenges of the people we serve."

Significant activities for the 1989-90 year include:

- Providing information and training regarding the Workplace Hazardous Materials Information System (WHMIS) throughout the province.
- Arranging a pilot exercise training program for "Back Power".
- Taking part in government pilot projects on a new performance appraisal system and human resource information system.
- Drafting of a manpower and organizational plan.
- Participating in strategic planning conferences at the divisional level.
- Setting up a pilot Partnership in Education program with a local high school.
- Purchasing building evacuation devices to assist persons with physical disabilities.
- Offering a blood pressure clinic and follow-up as part of employee wellness initiatives.
- Providing a joint training seminar for union members and management in the Corrective Discipline and Grievance Resolution areas.

# Management Services Branch

Is a "service-oriented" unit in the department. Substantial services are provided in the following areas:

- data processing
- information systems
- user computer training
- system coordination & monitoring
- organization reviews
- inter-government liaison

The branch completed strategic planning this year. The focus for the branch was defined as: LEADERS IN INFORMATION TECHNOLOGY AND MANAGEMENT SERVICES. To achieve this, the following goals were established:

GOAL 1 - respected for our expertise in the use and promotion of new information technology

GOAL 2 - respected for our excellence in client services

GOAL 3 - open and effective communications

GOAL 4 - a working environment committed to excellence

GOAL 5 - effective leadership and coordination of change management

1989-90 also brought many changes in the way systems are developed. The branch adopted a new methodology for systems analysis and design called the "Magnum House Approach". This development strategy applies the latest software engineering concepts to the development of systems. Additionally, the focus of the systems effort becomes the definition of the business policies and procedures.

Management Services Branch also enhanced its expertise in PC databases through the development of internal accounting systems. A time accounting system for recording and tracking time spent on systems development and maintenance was developed for the PC in Oracle. Systems were developed in Paradox to record branch expenditures and to report on WestBridge computer billing.

A set of recommendations regarding the rebuilding of the department's financial systems was prepared by consultants. The strategy presented calls for phased implementation of an integrated financial management system (FMIS) by 1994-95.

A feasibility study was also completed for the Traffic Accident Information System. The report recommended the re-writing of the system for the Local Area Network (LAN) in order to reduce operating costs and to enable easy user access to accident information.

## Year Of The LAN

1989 was the "Year of the LAN" in the computer industry and so it was in the department. Management Services Branch expanded the LAN pilot to all Districts. These installs brought the total number of LANs in the department to seven (one in Head Office and six in district offices). The LANs will allow connected PC users to share expensive peripherals (such as laser printers and plotters) and data (such as documents, spreadsheets, and database tables). They also hold forth the promise of enhanced productivity and better utilization of Personal Computers. Communications for E-MAIL and RJE (batch data) was established from the remote LANs to Head Office and from there to WestBridge. Approximately 100 workstations were purchased for the various networks.

# Property Services Branch

Property Services Branch is responsible for:

- the appraisal and negotiation of land for various department programs
- establishment of standard rates of compensation for land related damages negotiated by the branch and other department units
- arranging for the legal survey services required for department right of way and public improvement projects
- the registration of rights to property to meet the department's construction schedule and the Grid and Main Farm Access Road Program
- payment for various related services and for land where title has been secured
- the management of property rights under the jurisdiction of the department pertaining to public highways and public improvements.

## Property Acquisition

- A total of 855 land purchase agreements and related contracts were successfully negotiated on 46 highway projects. This is an increase of 38% in the number of agreements secured over the previous year. A total of 512 properties were appraised, negotiated and acquired by a property acquisition staff of five at a negotiation success rate of 99.2%. The number of expropriations is the fewest on record dating back some 20 years.
- A total of 70 requests to subdivide land adjacent to provincial highways were reviewed and direction was provided on the manner in which roadway lands would be transferred to the province. In 20 of the subdivision requests, there was direct involvement by property acquisition employees to appraise and negotiate for land by purchase agreement or dedication agreement.
- No new claims for arbitration were filed with respect to right of way expropriated under The Expropriation Procedure Act. Of the nine outstanding arbitration cases on file, four were active during the year with the following results:
  - — One old 1967 case settled out of court.
  - — Two 1986 cases settled during the Examination for Discovery process.
  - — No progress on one case due to problems with owner attempting to arbitrate without legal counsel.
- Work continued on the update and rewrite of the Property Acquisition Manual

## Property Registration

- The registration of plans of survey and legal documents and the procurement of legal survey services was completed on time to meet construction schedules for the provincial highway grading program.
- Miscellaneous roadway conveyancing service was provided for the following programs:

| | |
|---|---|
| Rail Line Abandonment Transfers | 33 |
| Indian Land Entitlement Transfers | 5 |
| Northern Community Land Transfer | 4 |
| Northern Farm Transfers | 4 |

- Commenced writing a manual for Property Registration procedures and completed three sections.

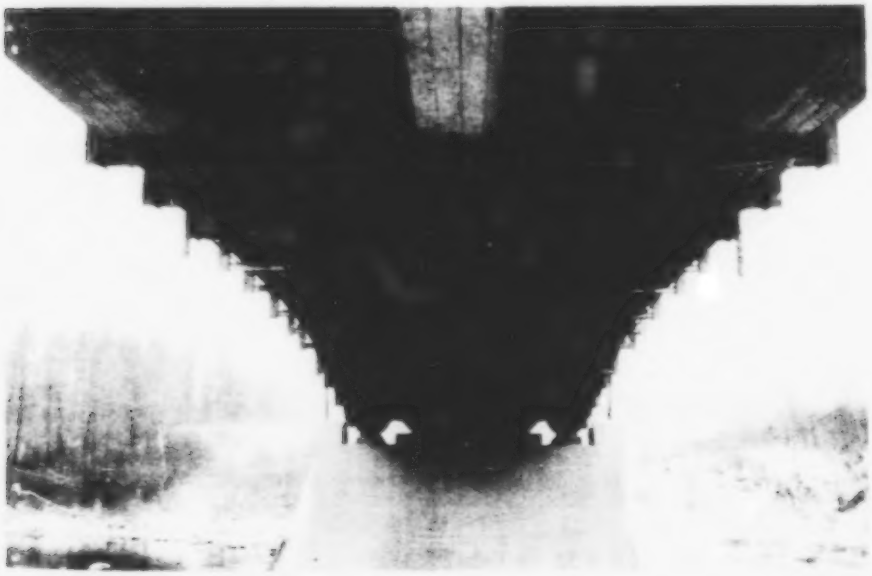
Property Management

- A total of 1,257 requests for consents and permits were granted in department property, a decrease of 10% from the previous year.
- The program of microfilming non current branch files was continued.
- Completed a users' manual for the new automated survey plan index system.
- Commenced writing a manual for Property Management procedures and completed three sections.

- Expanded the use of personal computers in the following areas:
  - Work progress reports and charts
  - Dedicated right of way agreement file
  - Organization charts
  - Preparation of branch manuals
  - File to monitor lease lands

### 1989-90 Accomplishments

| | |
|---|---|
| Plans of survey recorded (all types) | 1,263 |
| Road, Public Improvement and Reference Plans processed | 548 |
| Road, Public Improvement and Reference Plans registered | 461 |
| Provincial Highway, Public Improvement and miscellaneous surveys contracted | 38 |
| Kilometres of Provincial Highway contracted | 138 |
| Consents and Permits issued | 1,257 |
| Closures, Abandonments and Encroachments issued | 260 |
| Property agreements paid | 849 |
| Property agreements negotiated | 855 |
| Leases, Grazing and cultivation permits issued | 160 |



# Financial Services Branch

The Financial Services Branch provides centralized financial services and financial management information to, and on behalf of, department managers.

During 1989-90 several opportunities arose which enabled the branch to improve services.

After consultation with the EMIS committee, a new system was developed and implemented which charged the licensing costs of equipment directly to the equipment units rather than to overhead. This change required the cooperative efforts of several branches and all districts and will result in improved management information.

The recommendations of the quality circle formed in 1988-89 were successfully implemented this year. As a result, there has been a dramatic improvement in the work environment of the largest unit within the branch.

The manuals and reference books which had accumulated in the branch over the years were sorted during 1989-90 and organized into a library. In addition, staff worked closely with the Saskatchewan Archives to create a new Records Retention Schedule for the branch.

The governments' renewed emphasis on service and efficiency resulted in the establishment of a team to review the operations of the mail function within the branch. The team is consulting with users and other entities to identify enhancements to the current processes which will be implemented during 1990-91.

As in previous years, computers impacted significantly on the operations and activities of our branch. The introduction of IBM compatible personal computers has enhanced our capability to perform our functions in a professional manner. As well, the branch was actively involved with both the computerization of the Permit System and the testing of off-site data entry capabilities.

A fuel questionnaire was prepared to capture input from department staff in order to make our fuel operations more efficient and economical. Recommendations resulting from this study will be implemented during 1990-91.

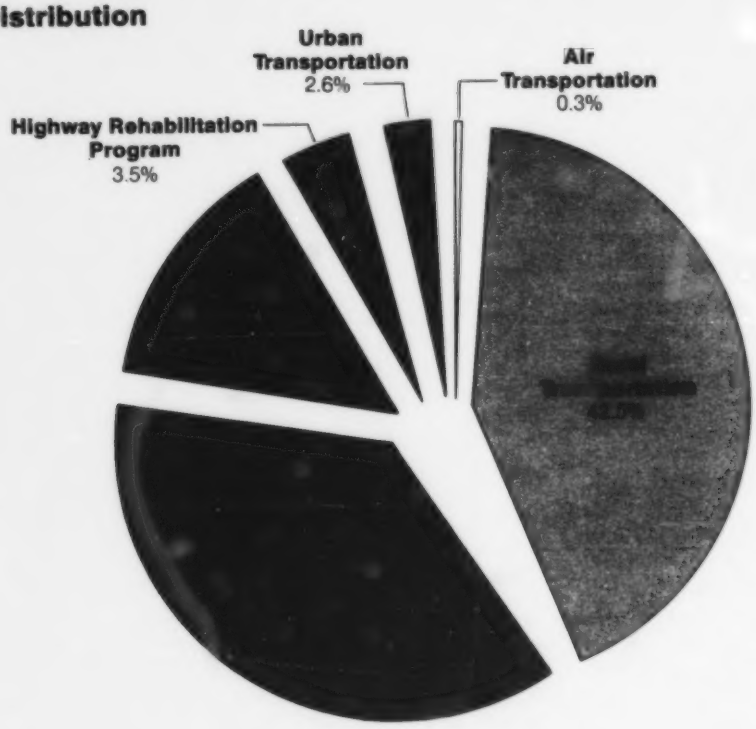
Branch support staff organized a one day seminar on topics ranging from communications to stress management. Evaluations indicated that this was one of the most worthwhile seminars that many had attended.

## Appropriation and Expenditure 1989-90

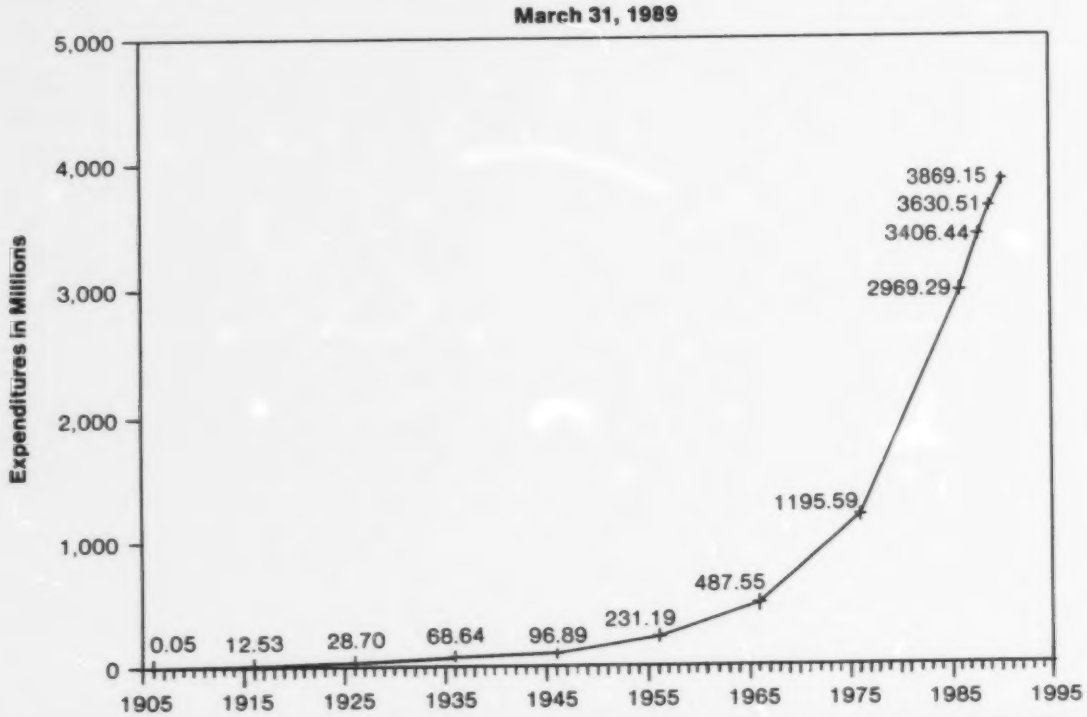
| Ordinary | Appropriation | Expenditure |
|---|---|---|
| Executive Administration | $ 985,100 | $ 1,228,234 |
| Financial Services Branch | 686,600 | 683,911 |
| Human Resources Branch | 870,100 | 896,546 |
| Transportation Planning and Research Division | 2,959,200 | 3,496,546 |
| Property Services Branch | 674,800 | 675,120 |
| Communications Branch | 654,000 | 709,201 |
| Operations Services Branch | 1,040,600 | 1,231,037 |
| Engineering Division | 2,480,400 | 2,632,687 |
| Bridge Branch | 444,800 | 419,663 |
| Swift Current District | 1,209,700 | 1,200,600 |
| Regina District | 1,696,500 | 1,685,965 |
| Yorkton District | 1,120,700 | 1,176,438 |
| Saskatoon District | 1,059,800 | 1,068,547 |
| Prince Albert District | 1,563,200 | 1,570,974 |
| North Battleford District | 1,420,500 | 1,308,521 |
| Management Services Branch | 1,101,500 | 1,089,111 |
| Grants | 138,800 | 137,755 |
| Regulation and Traffic Safety Division | 4,016,400 | 3,578,632 |
| Payments to Sask Property Management Corporation | 9,637,100 | 9,193,333 |
| Members of Executive Council (Statutory) | 36,820 | 36,860 |
| | $ 33,796,620 | $ 34,019,681 |
| Maintenance | 89,871,800 | 87,905,253 |
| Subtotal | $ 123,668,420 | $ 121,924,934 |
| **Capital** | | |
| Rural Surface Transportation | $ 103,840,000 | $ 101,381 222 |
| Urban Surface Transportation | 6,600,000 | 6,183,380 |
| Air Transportation | 900,000 | 695,815 |
| Highway Rehabilitation Program | 10,000,000 | 8,452,137 |
| Subtotal | $ 121,340,000 | $ 116,712,554 |
| **Total** | $ 245,008,420 | $ 238,637,488 |

* The effect of virements is not reflected in these amounts.

## Expenditure Distribution




## Accumulated Expenditures to Date



## Accumulated Expenditure to Date

| Fiscal Year | Current Year | To Date |
|---|---|---|
| 1905-06 | $ 49,546 | $ 49,546 |
| 1906-07 | 484,177 | 533,723 |
| 1907-08 | 1,041,383 | 1,575,106 |
| 1908-09 | 1,443,335 | 3,018,441 |
| 1909-10 | 591,957 | 3,610,398 |
| 1910-11 | 610,920 | 4,221,318 |
| 1911-12 | 614,356 | 4,835,674 |
| 1912-13 | 2,525,188 | 7,360,862 |
| 1913-14 | 1,970,135 | 9,330,997 |
| 1914-15 | 2,370,439 | 11,701,436 |
| 1915-16 | 831,594 | 12,533,030 |
| 1916-17 | 536,594 | 13,069,624 |
| 1917-18 | 815,438 | 13,885,062 |
| 1918-19 | 616,472 | 14,501,534 |
| 1919-20 | 1,306,370 | 15,807,904 |
| 1920-21 | 1,804,973 | 17,612,877 |
| 1921-22 | 2,495,925 | 20,108,802 |
| 1922-23 | 2,201,358 | 22,310,160 |
| 1923-24 | 2,037,295 | 24,347,455 |
| 1924-25 | 2,229,408 | 26,576,863 |
| 1925-26 | 2,123,173 | 28,700,036 |
| 1926-27 | 2,660,195 | 31,360,231 |
| 1927-28 | 2,488,961 | 33,849,192 |
| 1928-29 | 4,228,261 | 38,077,453 |
| 1929-30 | 6,664,400 | 44,741,853 |
| 1930-31 | 10,703,359 | 55,445,212 |
| 1931-32 | 8,149,746 | 63,594,958 |
| 1932-33 | 905,374 | 64,500,332 |
| 1933-34 | 862,029 | 65,362,361 |
| 1934-35 | 1,661,983 | 67,024,344 |
| 1935-36 | 1,620,142 | 68,644,486 |
| 1936-37 | 2,595,381 | 71,239,867 |
| 1937-38 | 2,823,356 | 74,063,223 |
| 1938-39 | 3,509,280 | 77,572,503 |
| 1939-40 | 3,399,603 | 80,972,106 |
| 1940-41 | 1,706,382 | 82,678,488 |
| 1941-42 | 1,874,917 | 84,553,405 |
| 1942-43 | 2,126,374 | 86,679,779 |
| 1943-44 | 2,918,157 | 89,597,936 |
| 1944-45 | 3,387,320 | 92,985,256 |
| 1945-46 | 3,908,367 | 96,893,623 |
| 1946-47 | $ 6,312,801 | $ 103,206,424 |
| 1947-48 | 8,840,535 | 112,046,959 |
| 1948-49 | 8,853,999 | 120,900,958 |
| 1949-50 | 8,767,610 | 129,668,568 |
| 1950-51 | 10,118,744 | 139,787,312 |
| 1951-52 | 12,823,535 | 152,610,847 |
| 1952-53 | 18,919,646 | 171,530,493 |
| 1953-54 | 19,135,070 | 190,665,563 |
| 1954-55 | 20,395,779 | 211,061,342 |
| 1955-56 | 20,127,262 | 231,188,604 |
| 1956-57 | 24,140,190 | 255,328,794 |
| 1957-58 | 24,491,369 | 279,820,163 |
| 1958-59 | 23,697,574 | 303,517,737 |
| 1959-60 | 23,104,119 | 326,621,856 |
| 1960-61 | 25,237,066 | 351,858,922 |
| 1961-62 | 21,591,307 | 373,450,229 |
| 1962-63 | 22,094,828 | 395,545,221 |
| 1963-64 | 24,167,674 | 419,712,731 |
| 1964-65 | 27,152,511 | 446,865,242 |
| 1965-66 | 40,679,979 | 487,545,221 |
| 1966-67 | 54,387,704 | 541,932,925 |
| 1967-68 | 60,227,543 | 602,160,468 |
| 1968-69 | 60,110,923 | 662,271,391 |
| 1969-70 | 58,560,829 | 720,832,220 |
| 1970-71 | 68,081,718 | 788,913,938 |
| 1971-72 | 66,933,052 | 855,846,990 |
| 1972-73 | 63,362,093 | 919,209,083 |
| 1973-74 | 69,456,878 | 988,665,961 |
| 1974-75 | 96,760,356 | 1,085,426,317 |
| 1975-76 | 110,162,524 | 1,195,588,841 |
| 1976-77 | 123,321,325 | 1,318,910,166 |
| 1977-78 | 132,425,146 | 1,451,335,312 |
| 1978-79 | 160,610,850 | 1,611,946,162 |
| 1979-80 | 158,107,523 | 1,770,053,685 |
| 1980-81 | 168,287,313 | 1,938,340,998 |
| 1981-82 | 191,474,090 | 2,129,815,088 |
| 1982-83 | 192,829,361 | 2,322,644,449 |
| 1983-84 | 215,968,431 | 2,538,612,880 |
| 1984-85 | 211,979,173 | 2,753,592,053 |
| 1985-86 | 215,695,526 | 2,969,287,579 |
| 1986-87 | 219,921,430 | 3,189,209,009 |
| 1987-88 | 217,227,529 | 3,406,436,538 |
| 1988-89 | 224,076,485 | 3,630,513,023 |
| 1989-90 | 238,637,488 | 3,869,150,511 |